

The house servants of the Tui Tonga were the *vaociki* and the *tamaioeiki*.⁶⁴³ The *vaociki* was a woman of the *matapule* class, appointed by the Tui Tonga⁶⁴⁴ to care for his household. She had her house within the Tui Tonga's enclosure. She was the custodian of food and supplies, and general household manager, having charge of the other servants. It was her duty also to personally look after the welfare and comfort of the Tui Tonga, ministering to him when he was ill. The *tamaioeiki* were the men servants of the Tui Tonga who actually did the work in the house in which the Tui Tonga lived. The public was excluded from the house. A person coming to see the Tui Tonga sat outside and told his message to a *matapule*, who in turn took it to the Tui Tonga.

The salutation to the Tui Tonga was, "Malo e lakoife ae afiona" (Being⁶⁴³ well or in good health, his majesty). "*Hoo afio*" (your majesty) is em-⁵⁷⁶ployed to-day of the Deity. The Tui Tonga might be addressed either in¹⁹⁵ the second person, *hoo*, or the third person, *ae*. "The heavens are void" was the metaphorical announcement of the Tui Tonga's death.

A kind of garland, *lala heilala*, was worn only by the Tui Tonga and⁶⁴³ the Tamaha. The *heilala* or wax flower, "formerly found growing only³⁰¹ upon the lands of the Tui Tonga," were strung like beads on a strand of⁸²⁴ *fau* bark, no other blossoms being used, and the strings of blossoms were formed into a rather broad, heavy band.

The Tui Tonga's hair and beard were trimmed by singeing. The en-⁶⁴³velope (*loutoume*) of the immature coconut was burnt and a living coal³⁰² therefrom applied to the hair.

When the Tui Tonga drank the milk of a green coconut, at the same⁶⁴³ time digging out the meat and eating it as he drank, he exclusively employed⁴¹² for that purpose a fresh cut stick from the *toi* tree, the green twigs of which²⁷² have a sweet mint-like fragrance.²⁶²

Jioeli Pangia, the man who perhaps would be Tui Tonga today if the⁶⁴³ office had not been absorbed by the Tui Kanokupolu, gave the following⁶⁴⁴ information as to the constitution of the Tui Tonga's immediate following and relatives. The classification is purely one based upon rank and the rank in turn based upon relationship. All of the people mentioned were relatives⁶⁴³ of the Tui Tonga, though some very distantly related.⁶⁴⁴

1. *Fahu*. Highest in rank. The elder daughter of the elder sister of the Tui Tonga was the Tamaha. Her brothers and sisters were also *fahu* to the Tui Tonga.⁶⁰²
2. *Kalngaoifi*. The Tui Tonga's immediate family including himself. Of these the elder sister of the Tui Tonga held highest rank. (By immediate family is meant full brothers and sisters.)^[593]
3. *Matapule*. Advisers and officers executing the Tui Tonga's business.
4. *Kalnangafonua*. Official and household servants of both sexes. These were commoners.
5. *Tamai e eiki*. Cooks and low people.

The fishing place for bonito is the Hakau Tapu (Prohibited Reef), lying off Hihifo, Tongatabu. As the name implies, commoners could fish there only under instructions from Ata. The first Faoa for this district is said to have been sent to live at Kanokupolu by a Tui Haa Takalaua, now, however, he is appointed by the Tui Kanokupolu. At the coronation of the Tui Kanokupolu the Faoa makes a speech concerning the capture of fish. The Faoa settled the time of the bonito fishing following the observation of flocks of birds over the Hakau Tapu, but had no power to order the people to fish. When the time was ripe he notified Ata, who sent messages to all the men of the Hihifo district who were able to paddle, ordering them to participate in the fishing on a set day. Fish caught on such a communal expedition were brought to Ata, who forwarded the best of them to the Tui Kanokupolu, took what he wished himself, and then allowed the rest to be divided among the fishermen and paddlers. Faoa himself and some of Ata's inferior relatives, such as sons and brothers, carried the fine fish to the Tui Kanokupolu. The method of fishing is described by McKern (43).

Faoa and his relatives and the relatives of Ata cut the bonito in a special way, a person cutting it otherwise was punished with a thrashing. Ata said that no supernatural punishment, such as the premature departure of the bonito, would follow wrong cutting. It seems likely, however, that anciently there must have been some sort of supernatural sanction. The method as described to me follows:

The fish is placed on its side with the tail towards the operator. The knife (anciently, at least, of bamboo) is drawn from a point just posterior to the lateral fin nearly to the tail, then curvingly around to the belly. Without being lifted, the knife is then drawn back in the groove just cut to the starting point; then drawn tailwards again, then curvingly to the back, then to the starting point; then down from the starting point and up the belly. Again it is drawn back to the starting point, tailwards, curvingly to and up the back, then to the starting point. It is then drawn down again and up the back, then around on to the other side of the back to a position below the lateral fin on that side. At the same time this movement of the knife is executed the fish is turned and the operation repeated on the other side. At no time during the operation is the knife lifted. After the cutting the fish is lifted up by the tail and if the work has been properly done the flesh falls off and is easily disconnected from the backbone.

Fishing for the *vete* (about a foot long and with a longitudinal yellow stripe) and other fishes, in the charge of the petty chief called Latukefu, is done on the weather shore of Tongatabu near Kolovai. When the fishes come through the passage in the reef into the shallow water, Latukefu, who has had one of his people on watch, reports it to Ata. The *vete* is caught with a hand net (*kupenga sili*), which Latukefu's male relatives in particular are taught to use. The first catch, called *kato kia* (basket to) Ata, is sent at once to Ata, who sets aside the fish for the Tui Kanokupolu and instructs

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Bernice P. Bishop Museum—Bulletin 61

A chief's

son was never operated on alone but always with companions. There was 881
no special tapu connected with operating on a chief's son. 622

The man performing the operation was called *faikaukau* or *faitefe*. He 881
was not a chief's appointee. The only factor in determining who could be 304
an operator was skill, involving such factors as a cool head, steady hand, 157
previous experience, and that type of personality that tends to inspire confidence. The operator would never be the initiate's brother or cousin, but 593
might be his father, uncle, or any other elderly man reputed for skill in the 603
community. An informal council of interested fathers selected the operator 604
who was to officiate. 887

Preceding the operation the boys bathed themselves thoroughly in the 515
sea. This bath was called *fufulu*. After drying on a tapa towel, they were brought one at a time to the place of operation. This was usually situated outdoors under a large shady tree, the species of tree being of no importance. The spectators were the adult male relatives of the initiates. The rock, mat or large tree root on which each boy sat naked is called *hekehaka*. The operator sat on the ground in front of the boy in the usual 516
tailor fashion of Tongan men.

The cutting instrument now used is a razor. Formerly it is said to 412
have been a bamboo knife or sharp shell. A piece of unprinted or uncolored tapa (*fetaaki*) is now wrapped round and round the razor blade, leaving only the tip of the blade exposed. The following is a description of the operation:

A piece of bamboo was placed over the head of the penis, the foreskin drawn down over this, then the operator, with one quick stroke of the razor, or more if necessary, slit the foreskin throughout its entire superior length.

Then the operator chewed the leaves of a fern called *laufale* and squeezed some of the juice of the masticated plant on to the incision. The cut foreskin being doubled back around the medial portion of the penis was wrapped with the leaves of *lavakavavulie* from which the large fibers had been extracted. The whole was well bandaged with unprinted tapa. A girdle of this material was passed about the waist and between the legs to hold the penis against the belly. The wound was dressed twice daily. 824
752

The boys, having all been operated on, were confined in a house together. No one 881
might visit them, but their adult male relatives. Food was brought to them. They 784
could leave the house only to defecate and urinate. The operator instructed them in the tapus they were to follow. They were told not to think of women. If one suffered from erection, he pulled hard at a piece of rope (called *tukutaopeanga*) suspended from the rafters and the erection left him. Other tapus forbade the eating of anything sweet, the drinking of anything but water, and only one cup of that a day, the eating of anything red, at the present day the eating of any tinned goods, the taking of a bath for five days and nights, and the performance of any heavy work or walking. 831
262

In urinating the patient squatted down on his left knee, the right knee high, the body bent low over the right knee, the weight of the body supported by the right hand, while with the left hand he served himself. This position prevented the urine from running back on to the erectly held penis. If it should run back on to the penis, a swelling is said to have resulted. This caused extreme pain and even loss of life. It was called *mimi* and the squatting position described above was called *mimifakatafififi*. 514
881

(36, vol. 1, p. 301) refer to a Tongan king, apparently about the twentieth
Tui Tonga, who was a cannibal. An unusual form of cannibalism is re-
vealed in the story of the Tui Tonga Takalaua and Kauulufonua I. Two
assassins were carved to pieces alive and their raw flesh served as relish
for the kava drinking (26, p. 34). Bamboo knives were used as carvers.
A story about the deity Hikuleo (op. cit. p. 192) refers also to the carving
alive of children for food. See page 312 for the reference to a cannibal
god of Samoa who was ultimately slain himself and eaten by the son of a
Tui Haa Takalaua.

ENTERTAINMENT

Tongan entertainments have been well described by Cook and sub-
sequent writers. By far the best general account of Tongan dances is given
by Bishop Blanc (39, pp. 74-86). Some scraps of additional information
are presented here.

At the wedding of the present queen of Tonga the following dances
were performed: the *kailan*, an Uvean dance by men, in which small
paddles called *kaupaki* are used; *mauluulu*, a Samoan dance; *meke*, a Fijian
dance; *tau fakaniua*, a Niuatoputapu dance; *lakalaka*, a Tongan dance, in
which the women were seated, the men standing. Every village put on a
lakalaka. The songs accompanying some of the dances told about the
queen's wedding. The songs of the Vavau people told about a recent
famine there.

At an entertainment which I attended at Taunga, April 2, 1921, a
poetic reference was made by a poet and his chorus to a visit I had made
in the forenoon of the day to the great vault tomb of hapless Talafaiva,
wife of the Tui Tonga Uluakimata I (26, p. 37). Whether the poet spoke
extemporaneously or whether he knew of my intended visit, the reference
was cleverly made.

This entertainment, which was a picnic, was given us by the Governor
of Vavau, but the refreshments and entertainment were actually furnished
by Akauola, the matapule who holds Taunga as a fief from the king. About
twenty Taunga girls danced. They were seated in a row on mats outside
the sunshelter under which the food was served. The costumes were varied,
consisting of leaves and flowers sewed to cloth and tapa, also bright colored
cloth garments. Plumes of red and blue material and guinea-hen feathers
were worn in the hair of some of the dancers. The exposed portions of the
body were oiled.

All were sitting dances with the exception of two which seemed to be
endurance contests. They were performed by pairs of girls, a man joining
in apparently to urge on the girls. In one of these dances the feet were

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lowers, and were dressed in a manner nearly similar, but not with quite so many mats. The lady and her five companions being all ready, proceeded to the *maláí* of Tooitonga, who was there, waiting for their arrival, together with a number of other chiefs, two matabooles sitting before him. The lady and her attendants being arrived, seated themselves on the green before Tooitonga. After the lapse of a little time a woman entered the circle with her face covered up with white *gnatoo*; she went into the house of the *maláí*, and proceeded towards the upper end, where there sat another woman in waiting with a large roll of *gnatoo*, a wooden pillow*, and a basket containing bottles of oil. The woman, whose face was veiled, took the *gnatoo* from the other, wrapped herself up in it, and laying her head upon the wooden pillow, went, or pretended to go, fast asleep. No sooner was this done than Tooitonga rose up, and taking his bride by her hand, led her into the house, and seated her on his left hand. Twenty baked hogs were now brought into the circle of the *maláí*, and a number of expert cooks came with knives (procured from European ships;

* A pillow to sleep on in these islands consists merely of a rod of wood about an inch in diameter, and a foot and a half long, and raised about half a foot by two diverging pieces at each end: the nape of the neck rests upon this.

643 formerly they used bamboo) to try their skill in
 585 carving with speed and dexterity, which is con-
 252 sidered a great recommendation. A considera-
 412 ble part was shared out to the chiefs, each taking
 177 his portion and putting it in his bosom*. The
 565 remainder of the pork was then heaped up and
 scrambled for at an appointed signal. The wo-
 man who had laid herself down, covered over
 with *gnatoo*, now rose up and went away, taking
 with her the *gnatoo*, and the basket containing
 the bottles of oil, as her perquisites. Tooitonga
 then took his bride by her left hand, and led
 her to his dwelling, followed by the little girl
 and the other four attendants. The people now
 dispersed, each to his home. Tooitonga being
 arrived with his bride at his residence, accom-
 panied her into the house appropriated for her†,

[784] * It is a peculiar religious injunction in this ceremony, that
 [262] the chiefs should put their pork in their bosoms, for they never
 eat it themselves: and as it is *tabooed* by touching them, no
 other native of the Tonga islands may eat it: so that it ge-
 nerally falls ultimately to the lot of the natives of the *Fiji* islands,
 or other foreigners present, who are not subject to the *taboo*
 of Tonga. For the nature of the *taboo*, reference must be
 made to the second volume of the work.

[595] † It must be noticed that every great chief has within his
 [342] fencing several houses, one or more of which always belongs
 [565] to his wives. He seldom goes to their house to sleep: he ge-
 [784] nerally sends for one to sleep with him; at least, this is al-
 ways the case with Tooitonga, for nobody can eat, drink, or
 sleep, in the same house with him without being *tabooed* (see
Taboo.)

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daring fellow, who often ventured by night⁶⁶⁹ and early in the morning close up to the *colo*⁷²⁶ of Neafoo to kill any stragglers they could meet with. One morning a party of Finow's men, twelve or fourteen in number, among whom was Mr. Mariner, being out on a little excursion, surprised four of the enemy, who were busily employed digging *ma** in a pit: these they immediately laid hold of, and dragged out, to take them home prisoners. Imagining⁶⁶⁹ they had got Moteitá and his followers who had⁷²⁷ so often committed depredations upon them, they resolved to make a signal example of their prisoners. A young chief, however, objected to this measure, and proposed that it would be better to decapitate them at once, and take their heads home. This plan was immediately^[412] assented to, but some one observing that they^[237] had no knives with them, another casting his eyes upon the ground, remarked, there was something that would do as well; and taking up a shell from a neighbouring spot, where some persons had been eating large pearl oysters, he proposed to proceed to work with oyster-shells as substitutes for knives: this was immediately approved of, and the four unfortunate

* *Ma* is a species of prepared food, consisting of bread-fruit, or plantains, or bananas; buried for a considerable^[262] time under ground, in order to ferment.^[252]

669 victims were taken in hand. It was in vain
727 that they begged their lives, protesting that
[412] they were not the persons they had taken them
[237] for: in vain did Mr. Mariner point out the
cruelty of the act, urging them at least to kill
them first speedily, and cut off their heads after-
wards: to this remonstrance they answered that
their prisoners deserved to be severely punish-
ed for the many atrocities they had committed;
and as to killing them first, and cutting off their
heads afterwards, they thought it unnecessary
trouble. This horrible piece of cruelty was ac-
cordingly committed on the spot. They began
the operation, (after having stripped themselves,
to prevent their garments from getting bloody,)
by haggling at the back of the neck; they then
cut gradually round the throat, till they had
got through every thing but the spine, which
they divided by turning the head down, and
giving it a violent twist. This being done,
they washed themselves, resumed their *gnatoos*,
and proceeded with the four heads to the gar-
669 rison. It was still early when they arrived, and
727 they found the king sitting with his friends on
634 the *malái* drinking cava. The four heads were
brought to him by different men, and placed in
the middle of the circle upright with their faces
towards Finow, who returned his thanks (as
customary) to those who had killed them. Mr.

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decayed, and sending forth no very agreeable²³⁷
odour: this however was a circumstance they³⁰¹
did not much regard, their object being the
teeth, of the substance of which they make a
kind of necklace, by cutting it into smaller
pieces, each preserving the shape of a whale's
tooth, from an inch to four inches long, having
a hole in the broadest part, through which they
are closely strung, and put round the neck;
the largest being in front, and the others de-
creasing in size on each side, up to the back
of the neck; so that, when drawn close, their
pointed extremities spread out, and form a very
agreeable ornament upon their brown skins,
and is much prized by them, on account of its
scarcity as well as beauty. This has given rise^[42]
to the accounts which voyagers have given
that they wear teeth round their necks, whereas
they are only forms of teeth cut out of the
tooth of the whale; and it is astonishing with
what neatness they do this, making as little
waste as would be possible to do with much
better instruments than what they possess;
which is nothing, in general, but a common
shaped European chisel, or a piece of a saw,
or in defect of these, a flattened nail rendered
sharp: before they procured iron from Eu-
ropean ships, they made use of a sharp stone.
This kind of ivory they also use to inlay their²³⁷
⁵³¹

634 ing, that as he was a man, he ought to feel as a
 727 man, and not mingle his sorrows with those of
 562 women; but if he wished to express his love
 577 for Finow, who had adopted him as his son,
 and had given him the name of a son whom he
 had lost some years before*, he should demon-
 strate that love and respect for the memory of
 so good a father, by engaging his attentions in
 the interests of his family, particularly in those
 of himself, who was his lawful heir;—and not
 show his affliction by a silly profusion of tears
 and sighs, which was beneath the exalted cha-
 racter of a warrior.

634 About the middle of the night, no actual dis-
 668 turbance had taken place, but some of the
 prince's confidants, who were dispersed about
 to be on the watch, brought intelligence that
Voona was holding secret conferences with some
 of the natives of Vavaoo. The prince, however,
 thought it advisable not to take any active mea-
 sures, nor to appear to notice it: he therefore

[551] * The name of this son was *Tógi Obcumtea*, (an iron axe)
 [776] which was also the name of one of the gods of the sea: for
 [412] as they only obtain iron axes from across the sea, they na-
 [177] turally attribute the advantages which they possess, in having
 [597] such a useful instrument, to the bounty of a sea god, whom
 they have accordingly designated by this name. Finow's
 son, who was so called, was a great favourite of his father,
 who, when he adopted Mr. Mariner, gave him the same
 name, as a proof of his real esteem. Mr. M. always went by
 this name, or for shortness sake, *Tógi*.

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to sea, and returned to the Fiji islands to lay in 484
a second cargo.

The Fiji islanders make their canoes principally of a hard firm wood, called *fehi*, which is 499
not liable to become worm-eaten; and as the 171
Tonga islands do not produce this wood, the 396
natives are not able to build canoes so large or 197
so strong as those of their instructors: all their
large canoes, therefore, are either purchased or
taken by force from the natives of Fiji. The 396
natives of Tonga take the greatest pains with
their canoes, polishing them with pumice-stone,
and paying every attention that they are not
more exposed to the weather than is absolutely
necessary. The canoes of the Navigator's 171
islands are similar to those which were formerly
in use at Tonga, but the natives of those islands
never venture to the latter place but in canoes
manned with Tonga people.

FONO LE, carving ornaments out of whales 306
teeth, for the neck, and inlaying clubs, &c. with 322
the same material. This art, as far as it regards 531
ornaments for the neck, is of Fiji origin; but 171
inlaying clubs, wooden pillows, &c. is their own
invention. An account of the ornaments for
the neck has already been given, (Vol. I. p. 299.)
They inlay their clubs with extraordinary neat- 322
ness, considering the rude tool they employ, 531
which is generally a *togi* (or small adze), made 412
out of an European chisel, a piece of an old saw,

322 or even a flattened nail, to which a handle is
531 affixed. They only ornament those clubs which
[412] are considered good on account of their form,
[552] or the quality of the wood, or those which have
done much execution: to the latter it used to
be the custom to give a proper name. Those
that make these ornaments are chiefly canoe-
builders.

767 TOOFOONGA TA'BOO, superintendants of fu-
565 neral rites: these, as the name indicates, have
the regulation of every thing regarding burials
of principal chiefs: they are generally mata-
booles, and are always consulted respecting the
preparations and forms of ceremony necessary
on such occasions, and which are handed down
by them from father to son.

324 TOOFOONGA TA MA'CCA, or makers of stone
764 vaults for the burial of chiefs. The general
form of these vaults has been already described,
(Vol. I. p. 144.) The stones used for this pur-
pose are about a foot in thickness, and are cut
of the requisite dimensions, out of the stratum
found on the beaches of some of the islands.

286 JIA COBE'NGA, net-making. This art is per-
formed exactly in the same way as with us:
the thread is made of the inner bark of a tree,
which they call *olongá*: large nets, however,
are made of plait, formed from the husk of the
cocoa-nut.

226 TOOFOONGA TOTY'ICA, fishermen. All those

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Formerly the whole of the clubs used to be engraved, but now this ornamental work is confined to the handle: it is executed with a great deal of neatness. A shark's tooth used to be the instrument, but now they make a sort of graver out of a nail flattened, sharpened, and fixed in a handle. Instances of their neatness in this sort of workmanship may be seen in our museums, and in the engraved representations of other works.

FY CAVA, shaving the beard. They have two modes of performing this operation, viz. with the two valves of a certain kind of shell, which they call *bi'bi*, and with pumice-stone: the latter is used by the party himself who requires the operation; the former by those whose profession it is to shave others. The edge of one valve being pressed horizontally against the chin or lip by the left hand, that portion of the beard which appears upon it is rubbed or filed off by the rough back of the other valve. This operation is generally performed once in about eight or ten days. The heads of infants are always kept closely shaved; but this is done with a shark's tooth by the mother.

FE oomoo, the art of cooking. If refinement in cookery be one proof of the civilization of a people, the natives of the South Seas have

289 without danger of leaving any of the fibres behind. The bark is then soaked in water for a day and night, and scraped carefully with shells for the purpose of removing the outer bark, or epidermis, which is thrown away. The inner bark is then rolled up lengthwise, and soaked in water for another day; it now swells, becomes tougher, and more capable of being beaten out into a firm texture: being thus far prepared, the operation of *tootoo*, or beating, [412] commences. This part of the work is performed by means of a mallet a foot long, and two inches thick, in the form of a parallelepipedon, two opposite sides being grooved longitudinally to the depth and breadth of about a line, with intervals of a quarter of an inch. The bark, which is from two to five feet long, and one to three inches broad, is then laid upon a beam of wood about six feet long, and nine inches in breadth and thickness, which is supported about an inch from the ground by pieces of wood at each end, so as to allow of a certain degree of vibration. Two or three women generally sit at the same beam; each places her bark transversely upon the beam immediately before her, and while she beats with her right hand, with her left she moves it slowly to and fro, so that every part becomes beaten

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STICK AND KNIFE

A player held a stick in one hand and struck it with a knife, repeating a rhyme. If he timed his strokes correctly he struck 15 times during the recital of the words. 539 524

Toki mo toki fekau mai e motu'a toki
Ke ta e toki ta ke fiha, ta ke hongofulu
ma nima kauka.

Hatchet and hatchet send here e, an-
cient hatchet,
To strike e, then strike how many?
Strike to ten times and five, kauka.

From these words it would seem that, before the advent of steel knives, a stone hatchet was used in striking the stick. [412]

POEMS RELATING TO PLACES

A very large class of poems celebrates the scenic beauties and interesting localities of Tonga. Gifford who has published a number of such compositions (21, pp. 5-19; 22, pp. 91-95), says, "the feeling for the beauties of nature is one of the marked cultural characteristics of the Tongan people." 539 823 [538]

Following are several more examples of this class of composition; but it is a class to which additions are being made constantly. Although special interest attaches to many of the pieces of the older bards, the native muse is as vigorous as ever. Localities and events are being constantly celebrated. Towards the end of 1911 I met a remarkable old blind bard in the tiny island of Fonoifua, Haapai, whose population numbers only about 35 souls. He took his band of singers into the little native built church, dimly lit by hurricane lanterns, and led them in the singing of his own compositions, pieces of haunting sweetness. Later in a dwelling, they sang a poem celebrating a concrete cistern that had been built on the top of the little hill in the center of the island. This cistern doubly deserved the honor of poetic celebration in that it was the first of its kind in that part of Tonga, and boasted the added glory of a pipe which brought the water from the cistern to the village. I do not know the old blind bard's name, nor have I any of his pieces, but would pay him this small tribute of recognition, for his airs are among the sweetest that I heard in the islands. 539 823 [361] [373] 539 312 538

THE ENVIRONS OF NUKUALOFA¹

Wind from the back of Koloa,²
Beat upon the anchorage of canoes;
Come let us praise Nukualofa,
Let us go up at Tongataepa,³
And ask in the homes of the chiefs
Where perchance is Onemalama?⁴
There stood a hala alone
On the mound Puamofefinea,

Near the pool Finenaakakala,
Where creeps the *ngingie* of the shore.⁵
The wild duck cry
Put to flight by the noise of the kava.
Come, let us leave Veitata,⁶
We shall go up at Tukungatokelau,⁷
Faletuuloto and Vakahahau,
And the pool of the fish that was buried.

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823

STONE CONSTRUCTION

KIND AND SOURCE OF MATERIALS

In building mounds, platforms, monuments, fortifications, walls, enclosures and miscellaneous structures, the ancient Tongans made large use of stone. The most common structures are masses of loose earth and gravel supported by retaining walls of both natural and dressed stones. Two kinds of stone were available, basalt and limestone. The basalt is on volcanic islands not conveniently near the larger, more densely populated coral islands; moreover, it is difficult to work with primitive tools. Though many native stories tell of *makahuna* (volcanic rock) brought from distant islands and extensively used, I saw only a few, small, undressed pieces of basalt forming part of the old structures. Limestone, however, is abundant, easily accessible, and presents varieties suitable for various purposes. The limestone forming the reef itself is massive, rough, compact, and without cleavage planes helpful to the mason. Though difficult to quarry, it possesses great strength and is the source of the thick long blocks needed for the largest structures. The kind of limestone commonly used (locally called "sandstone") consists of the lime sand of the beaches blown onto the shore and inland where it becomes consolidated into a stratified rock. Because it is composed of a series of superposed layers, it is easily quarried and broken into rectangular slabs suitable for retaining walls

QUARRYING METHODS

Stone quarries are to be found at many places where suitable rock outcrops. Quarries of considerable extent were observed on the islands of Lifuka, Mango, Uihā, and Ualeva in the Haapai group, and on Motutapu and Pangaimotu in Tongatabu. The largest quarry seen is on the northeast shore of Motutapu Island, where a bed rock 50 yards in length has been exposed and intensively worked. The stone slabs obtained from the quarry were 0.7 foot to 1.5 feet in thickness. Among the largest intaglios marking the removal of slabs is one which measures 10.5 by 6.3 feet by 0.6 foot, another, 10 by 6 feet by 0.6 foot, and a third, 9 by 8 feet by 1 foot. On some slabs, quarrying had been begun but not completed. The information obtained from these remnants of unfinished work regarding the successive stages of operations coincides exactly with that gathered from living informants.

The procedure was as follows. An area of desired size and shape was marked out on the rock surface. Large axes (*toki lahi*), fashioned of basalt and finished with faces tapering abruptly away from a blunt edge, were then employed to cut a groove around this outlined area. This groove was carried

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of banana stem was said to be joined to the hibiscus. A strip of the banana stem of course makes a very poor ligature, being loose fibered and brittle.

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41. Hu mata niu: Entering eye of nut.

There are three depressions at the top of the coconut, but only one of these marks a hole. The unskilled person might try to open the nut by piercing one or other of the two false eyes, but the experienced man goes for the right hole. Hence the expression means to get right on the spot, but is used in the bad, or at all events unpopular, sense of kindness confined to one's own immediate relatives or friends; kindness confined to one particular spot.

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42. Kai kape fifiji: Eating hot kape (*Arum costatum*).

One who has eaten a piece of this root at the pungent stage of its growth will find his mouth so burnt that he will not be likely to join in the conversation and laughter of those about him. This picture of the man sitting silent with his stinging mouth is used of one who, ashamed of a wrong done by him, or for some such reason, sits taciturn in the company of others.

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43. Koe vaavaa he koe tagata: Branchy, for 'tis man.

Man, with the wide and numerous ramifications of his relationships is the most branchy of all things. "Do you call so-and-so a many branched thing? Why, it is nothing compared to man."

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44. Malakia a moojipo: The moojipo trodden down.

This plant is frequently found in the road-ways, but lives on in spite of being walked upon. So the moojipo has passed into a proverb of that which bears up stoutly against ill-treatment and adversity; comes up smiling after every blow.

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45. Mamalu a mohuku: Overshadowing of grass.

One is overshadowed by forest trees, and this means literally one who undertakes to make a clearing on land where apparently large trees are standing, and finds that the "trees" are but weak and easily cut plants, "mere grass." So of any task seemingly formidable which, when undertaken, proves easy.

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46. Motu lou-tou: Broken tou leaf.

The leaf of the tou (*Cordia aspera*) is very brittle; a slight pull snaps the leaf completely asunder. So used of that which is broken right across, completely severed.

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47. Nonofa ae makahunu moe niu motuu: The makahuna (hard volcanic rock) living with the ripe coconut.

These rocks were used for making the stone adzes and were handy for splitting open a coconut, and breaking it up if necessary. The phrase,

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539 therefore, indicates the coconut living with that which destroys it. Used
245 of one who is in close contact with that which is his undoing. (Compare
412 No. 243.)
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539 48. Potopoto a niu mui: Wisdom of a young nut tree.

245 A young tree will sometimes bear a crop as though it were clever at
858 that game, but will pass fruitless through another season. So children will
at times behave with all the discretion of adults, but such conduct cannot
be expected to be the permanent characteristic of the young.

539 49. Tautehua a niu motuu: A ripe nut hanging by itself.

245 There is only one nut on the stalk, but that one is perfect and ripe.
A thing of which there are very few, and those few are of fine quality. A
man who stands alone, but who is exceedingly capable.

539 50. To lou oji: Leaf fallen finished, that is, all the leaves fallen.

184 This is not a familiar form of expression in most parts of the Tongan
group, in fact it is ungrammatical; it may have originated in Niua Foa
where it seems that such a form is permissible. The phrase is not known,
or at least not generally known in Tongatabu. Baker gives, "destitute";
poverty, or rather the poor, being represented as a tree denuded of leaves.

539 51. Tupu lautolo: Growing (like) *lautolo*.

824 The *lautolo* is a fast-growing, strong-creeping plant. To grow like
this plant is to grow quickly and strongly.

539 52. Tuutuu kau tala: Stand about I'll tell.

244 Used for one who makes slighing or offensive remarks about another
578 who, unknown to the speaker, is near by and listening. There is a plantain
called the *tuutuu-kau-tala*. Both the name of the plant and the meaning
of the expression are connected with the legendary hero Muni, who was
cast away at sea at, or before, birth and washed ashore on the island of
Lofanga in Haapai. He was found and adopted by a childless couple of
Lofanga, but as he grew to manhood his adoptive parents became anxious
to get rid of him. Returning home one evening Muni overheard from
just outside the house his supposed parents talking about him inside the
house. He leaned against a plantain, of the sort now called *tuutuu-kau-tala*,
and heard what they had to say. There is a couplet referring to this
incident:

Hau ai o tuu kau talai	Come and stand while I abuse
Aeni ne ui ai he hopa ni.	You after whom was named this plantain.

539 53. Ulu akaau: Overshadowed with trees.

824 A tree that is dwarfed, unable to reach its full stature and vigor, by
571 reason of a crowd of other trees standing close about it. Used of a
warrior who is overcome by the number of foes that press together upon
him. Generally of one who, no matter how great his spirit and skill, is
overwhelmed by the multitude of difficulties that confront him.

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OTHER MANUFACTURES

133. *E homo ae hui a Lafi*: The needle of Lafi will be parted. 539
with, that is, will be parted with more easily than the thing 412
that one proposes to do will be accomplished.

Lafi is said to have been the first to use the bone needle and whale's tooth in the manufacture of certain articles. His needle, or piercing instrument, was naturally not a thing to be given away lightly and obtaining the needle has become proverbial for that which is difficult of attainment. (Compare Nos. 340, 358 and 370.)

134. *Haihaija Kae heheia*: Bound up yet wandering about.

The thing that is bound up is wealth, and its owner does the wandering about. Tongan wealth, consisting largely of mats and cloth, is tied up in bundles and kept in the rafters of houses. One who is not well provided with these necessities of life will be likely to go about looking for someone of whom he may beg a supply. This expression indicates one who, though possessed of ample store himself, keeps his own goods carefully bundled up at home and goes about seeking assistance from the bounty of others as though he had nothing of his own. (Compare No. 106.)

135. *Hange ha fala kuo fofola*: Like a mat spread out.

Applied to a calm sea, also generally to anything with a smooth surface.

136. *Hange ha lali foa*: Like a cracked drum.

When the native drum is broken it is not usually thrown away but is stowed in the house where obviously it must often get in the way. The phrase is applied to useless people who merely take up room about a place.

137. *Nifi eni kae nafa e*: Little this but great that, that is, this is nothing to what there is going to be.

The word *nafa*, translated "great", means really the Tongan drum which consisted of a bundle of lengths of bamboo, closed at one end and open at the other, so arranged that half the openings were at one end and half at the other. A mat was wrapped round the bundle of bamboos, but leaving the ends exposed. The instrument was not stood on end, but laid lengthwise, and beaten with two sticks on the upper surface. In contradistinction to *nifi*, small and thin, the drum is used here as the symbol of that which is large and bulky.

138. *Nimo i talafau*: Hidden in the *talafau*.

Talafau is the space between two rows of plaiting on the bottom of one type of basket (called *kato fakaono*) of rather superior design and used only for things that will not soil it. A small article might be con-

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539 is that anyone who wishes to do kind acts had better choose a time when
571 they will be really useful.

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539 308. Ngingi uha: Sounding (of) rain.

821 This indicates the sound of the mallets used for beating out the
native cloth, or the sound of the native drum (*lali*) when there is rain

534 about. The note of the drum or *tappa* mallets is then a sign of rain.
412 Proverbially applied to the signs that something is about to happen. (See
287 No. 564.)

539 309. Uha kei lelei: Rain still good.

821 Rain falling at a suitable interval after the last previous downfall, as
distinguished especially from rain which falls after so long a period of dry
weather that many plants have died and are unable to profit by the down-

[183] pour when it does come. Generally of actions and circumstances of all
sorts that occur at appropriate times and are therefore able to achieve the
maximum of good.

SEA AND COAST

539 310. Anu tahi: Swimming (floating, wading) in the sea.

481 Used of one in difficulties, exactly as we say, "one has got into deep
829 water."

539 311. Auhia kae kisu atu pe: Obstructed by the current but spit-
ting on.

481 The picture is that of a swimmer striving against the current with the
183 water breaking in his face and getting in his mouth; but who keeps squirt-
ing or spitting the water from his mouth and battles bravely on. Applied
to one who goes indomitably on his way in spite of the difficulties which
beset him.

539 312. Fai tahi: Sea doings, that is, unusual behavior, sometimes
829 deceitful conduct.

184 The gods of the sea had characteristics different from those of the
land; the conduct of people at sea is not the same as their behavior ashore.
It is hard to say what special differences, if any, exist between longshore
and sea-going habits and particularly why the idea of craftiness should be
associated with this expression. Broadly it appears to mean things that are
not done ashore.

539 313. Fakaita fai ki tahi: Anger bestowed on sea; "to be revenged
571 on another by punishing oneself." (Baker.)

825 The story is that a party of brothers prepared food, yam with rats.
When the food was divided one of the brothers, apparently the youngest, was
dissatisfied with his share and in his chagrin jumped over a cliff into the

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old alike have simply flopped down on the soft matted floor and fallen soundly asleep.

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Swift twilight, then darkness, closes round the village. The women potter round the houses attending to a few evening tasks before they follow the children to sleep. The men bathe and dress in cool, clean shirts and *vala*. Then they sit out of doors talking to friends or else, led by the rhythmic beating of stone on stone as *kava* is crushed, they find their way to a nearby house where a *kava*-circle is being formed. The night drifts by as they drink and talk, talk and drink. And the stars are already low in the sky when the circle breaks up. The men quietly make their way home. A baby stirs in a nightmare sleep or a dog barks excitedly at passing shadows. But, for a short time at least, the village is at rest waiting in suspense for another day to bring its hot sun and its round of common tasks.

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The tempo of village activity is speeded up before the week of Christmas and New Year. Two days before Christmas we made the following notes:

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There is a slowly-developing crescendo of excitement in the village as Christmas Day approaches. Every night for the past week the youths and maidens of the village have been practising until past midnight the songs that they are newly composing to sing about the village on Christmas Day. Those more talented who also possess some musical instrument are equally busy in tearing to shreds the quietness of a village evening. They have grouped themselves together in what is politely called a "string band." The noise that comes down wind suggests that this "band" consists of a number of reedy mouth organs, a lone guitar, and a violin with two of its three strings missing.

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For all the people the working-day starts very early. This morning at four a.m. for instance, the woman in the house nearest us was busy cutting the long grass about her house with the huge three-foot bush-knife that serves the villager for all purposes from a lawn-mower to nail cutter or razor. All four of her children, the oldest under six, frolicked joyfully about her, pursued by her anguished screams as they forgetfully frisked within danger distance of the swift-cutting knife.

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Equally industrious, the men have been going to their bush plantations at dawn and returning just before dusk with heavy loads of food. The women have put in long days washing clothes, cutting grass and sweeping up all the rubbish of months from their house sections. Everything must be neat and tidy for Christmas week.

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PANGAI: A VILLAGE IN TONGA

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A special case is provided by a young man courting. The young man Avai, for instance, goes to Fakataha's house. If the household is awake he walks inside. If all are asleep, he wakens the group before entering and asking for the girl Ana to make *kava* for him. Other young men drift into the house as soon as a light begins to shine. Avai pounds the *kava* he has brought while Ana makes the drink. Fakataha the mother, acts as chaperon. It is not polite for her to tell the young men to leave. The whole household, therefore, must remain awake and active until the men decide to leave. They may stay as late as they wish, and if they have nothing better to do, they stay until the early hours of the morning. Children crawl into corners and go to sleep. Older people in the household sleep sitting up in the *kava*-circle. In the end, only Ana the maker, her vigilant mother, and the young men may be awake.

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The large wooden *kava*-bowl is a prized household possession. Most of those in the village have come from Fiji. Some are so worn and old that all the legs have been broken. As long as the bowl itself has not split, it is kept in use, propped up if necessary by elaborate piles of stones and pieces of wood. The stones between which the root is pounded (formerly it was chewed) are also special stones, kept for this use only. They are not shaped or modelled in any way. Two hard flat stones are all that is necessary, the base-stone as large and as flat as possible, the pounding-stone of any convenient shape that it may be gripped easily. A household not possessing either bowl or pounders borrows them from a friendly household should it desire to make *kava*. They are returned promptly after use because none wants to have responsibility for an accidental breakage.

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Kava-making in the village follows general Polynesian pattern.²⁷ The roots are crushed by a young man sitting beside the *kava*-maker. They are then placed in the bowl, water is added (generally from a nearby kerosene-tin), the crushed material saturated and squeezed and then removed from the bowl by the use of a strainer of coconut-fibre. One young man sits on either side of the maker. The boy to the

²⁷ Specific procedures used in the making of *kava* for special purposes such as at times of marriage and death, are noted in other appropriate sections of this report.

THE FIRST CODE.

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eating the yams, or destroying the produce of the land, the owner of the hog shall be at once informed that he may shut the hog up, and he shall restore whatsoever be damaged. If the owner neglect to take warning, either in confining his hog, or in recompensing the damage done, and the hog be again found eating the yams, it shall then be lawful to kill the hog, and the owner of the plantation shall have the carcass for his own.

By the end of 1855 the original code had been so tinkered by the missionaries that little of the original remained. Their hand is detected in the following excellent provision, designed to check the growing indolence of the people, and turn their labour into a channel of profit to the reverend legislators:—

XXXVI. *The law relating to men.*—You shall work and persevere in labouring for the support of your family as well as yourself, and in order to contribute to the cause of God and the chief of the land, and each man shall find a piece of land to cultivate. Any man who is not willing to work, shall not be fed nor assisted, all such persons being useless to the land and its inhabitants, and unprofitable to their friends.



A giant yam.

MODERN TONGA

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From the standpoint of his own needs, therefore, the Tongan is an efficient enough farmer, but if European standards are considered his farming leaves much to be desired. 241 434

One of the first things to impress the outsider is the enormous waste of land, for, apart from a few clearings for the food plants, the farm is largely given over to prolific weeds. Equally glaring are the primitive methods of cultivation. Machetes, spades, push hoes, and an occasional fork are the only implements used, and no appreciation is shown of the use of animal manure or of any other fertiliser. Reflection will suggest, however, that these conditions may not be entirely due to agricultural backwardness. Intensive cultivation would exhaust the soil, and in the absence of local supplies fertilisers would cost more money than the Tongan could afford. Weeds may rob the soil of moisture, but they do not exhaust its fertility and have at least the merit of preventing soil erosion. Undoubtedly much more could be produced from the average farm, but probably only if fertilisers, cattle and implements were provided on a scale beyond the resources of most farmers. 311 241 241 (412)

To a certain extent the general faults of Tongan farming may be excused. It is less easy to justify the defects of its particular branches, apart from a recognition that they may arise not so much from a lack of ability or energy as from a lack of agricultural training and capital. Many of the crops and especially fruit are ravaged by serious diseases and pests, which the farmer does little to control beyond avoiding to plant obviously damaged material. The copra is of relatively poor quality, commanding inferior export prices because it is produced, harvested, and dried in a very haphazard way. The Tongan usually gathers it only when he needs money for some specific purpose, and this casual attitude, together with the infestation of weeds about the trees, leads to a considerable wastage of nuts. There are few hot-air driers in use, the greater part of the crop being rather carelessly sun-dried. 245 251

Perhaps the worst of the Tongan farming is animal husbandry. Not only is the stock inadequate and of poor quality, it is also badly cared for. Systematic efforts to provide feed are rare, the animals being left to forage for themselves. It is not surprising that they are scraggy creatures, too often suffering from serious diseases. Tuberculosis is particularly rife in both cows and pigs. There is little attempt either to control these diseases or to improve the stock by breeding. 231 (232)

244 of from two to four feet, and are from three to seven feet in depth, according to the kind of yam planted. The earth is dug completely out of these pits, by the aid of small iron *huos*, or narrow lance-shaped spades, attached to a long wooden handle; and when the required depth has been reached, the loosened and pulverized earth is returned to the pit. This is done to permit the easy and rapid growth and expansion of the yam roots, which shoot downward like huge carrots. The pits are placed at equal distances from each other of about two or three feet, arranged in rows, and in the alternating order of the squares of a chess-board. Meantime, the settings have been prepared by slicing ripe old yams into pieces, varying from two to four inches in thickness. These are buried for a few weeks, until the vital portions of the yam have begun to sprout. This plan is necessary, because there are no eyes, or bud-marks, on the skin of the yam; such as are found in potatoes and other edible roots. Having sprouted, the good and vigorous settings are taken to be placed in the top of the yam-pits, at a depth of about three or four inches. When the vine has sprung up and begins to spread, it must be very carefully and constantly cleared of weeds, and must also be protected, as much as possible, from the effects of high winds. If the vine be damaged, the yam-root suffers in proportion; and should it be destroyed, by being choked with weeds, withered by the sun, or torn by the wind, the root beneath speedily perishes. The operation of the *ututa'u*, (the Tonguese harvest,) or raising the yams, when fully ripe, is even more laborious and difficult than that of the first preparation of the pits. To get them out of

EXAMPLES OF NATIVE SURGERY. 177

were really skilful; and this may be also said of them, in regard to a few severe and delicate surgical operations which they do not hesitate to perform. It is worthy of remark, however, that they never attempted amputations more serious than those of the fingers; and these were often effected in a most rude and barbarous manner, by either hacking and sawing them off with the edge of a sharp shell, or, in modern times, by the use of knives or carpenters' chisels. Two instances illustrative of these statements may be here given. The first is that of a woman, who came one day to the Mission dispensary, with a diseased finger. It had begun to mortify; and I told her that she must have it amputated at once. To this she assented, and expressed a desire that I should do it there and then. I told her that I was both unwilling and unable to do it myself, but referred her to a native doctor. Accordingly, she went to one immediately, and, waiting patiently until he had sharpened a tool for the occasion, the mallet and chisel disposed of the little member at a single stroke. Such wounds were always healed by cauterization.

The second example of surgical skill we shall adduce, was more refined and complicated. The writer was called upon, in common with other Missionaries, during a native war in the year 1852, to attend many cases of gunshot, and other dangerous wounds. Among the number, we were summoned to visit Joeli Mafileo, the Governor of Haabai, who had been dangerously wounded in the shoulder by a musket-ball. The ball had passed completely through the joint; shattering the bones most severely. When we arrived, we found that the native doctors had already dressed the

A Kava Ceremony in Tonga.

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siafemohemohe seeds, and also a few fans. The second was a *kaitumu* or food presentation. Included in this latter were six great green *kara* roots, nine roast pigs borne on *pola* or litters, scores of baskets of fruit and vegetables, bunches of the prized *luckare* or chiefly coconuts, many fowls, and a quantity of *ai* nuts, not unlike almonds, that were both in baskets and threaded on the stripped ribs of fronds of the coconut palm. The gifts in the second presentation were arranged in orderly rows on the *malae*. These were duly counted by representatives of the villages, who seated themselves behind the company and announced the number of each sort of gift. The food was then removed from the *malae*, or assembly ground, saving that five roast pigs were placed in order in front of the *loton*. Behind these pigs a party of natives seated themselves, with crossed legs, beneath the shade of an *orara* tree, the sacred tree of Tonga. The chiefs and some distinguished folks were ranged at the feet of Mr. Watkin and myself on the *loton*, we two alone being accommodated with chairs.

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In the centre of the group, on the *malae*, a woven mat was placed over a plaited coconut *pola*. On either side of the mat sat two men, called *hagai kara*, facing the *loton*. Beside each was a large, smooth volcanic stone, and in the right hand of each a smaller volcanic stone. These stones, valuable for their hardness, are brought from the island of Tofua. A green *kara* root was produced, the upper shoots, resembling bamboo sticks, were discarded, and the root itself was scraped and rubbed clean, and then passed to the *hagai kara*. Ordinarily the dried and not the green *kara* root is used for making the beverage. Next a native advanced bearing a *kumete kara* or *kara* bowl, set on four short legs. Before being put in position between the *hagai kara*, it was turned to the guests of honour, with the legs and bottom facing us. The *hagai kara* quickly pounded the root with the hard volcanic stones, the crushed pieces falling upon the mat. When the crushing was complete the broken fragments were put in the *kumete kara*, behind which a handsome woman, the *gaahi kara*, or *kara* maker, now seated herself. In more ancient days the practice was for the crushed root to be distributed amongst the young folks who possessed the whitest teeth, and who, when they had masticated the chips, discharged the contents of their mouths on to a plantain leaf, whence it was transferred to the *kara* bowl. This unhygienic method is now discarded.

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The *gaahi kara* with graceful sweeps and curves of arms and hands and body, all movements of symbolic import, began to mix the root and to extract its essence, the while the two *hagai kara* simultaneously poured water slowly from two buckets into the bowl. When she had made the liquor of sufficient strength, a strainer, which was simply a bunch of fibre or *fan*, was brought and spread by the *gaahi kara* on top

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CONCLUSION

000 Pottery from site 20, Fiji, displays certain rim forms, vessel shapes and decorative techniques that are also found in site 21, except that sherds with the *pointillé* style of fine incised decoration are lacking. It also shows that both paddle and anvil and hand-moulding techniques were in use in the manufacture of vessels. The flat-bottomed dish shape, the extensive use of outcurving flat rims, and the notched edging on the lip are paralleled in early pottery from sites in New Caledonia or the Ile des Pins on the one hand and Tonga on the other hand.¹⁴ In view of the fact that these sand hills may be exported for their iron ore content, it might be worthwhile that more extensive surface collections and some excavations were undertaken there in the immediate future.¹⁵

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Eastern Polynesian-Type Adzes from Tonga

By J. B. PALMER

412 These notes describe two gripped or tanged adzes of a rare type in west
 [128] Polynesia.¹ Few adzes from this area show a triangular cross-section with the apex to the front which, in some cases, has been reduced in width to form a ridge, except where the bevel modifies the cross-section. Many archaeologists and ethnologists, particularly in New Zealand, know this adze as the hog-back, its more familiar name. Golson records the almost complete absence of the type from the adze collections he examined in Tonga² so that any localised specimen is important for present studies in the type's distribution, not only in Tonga itself but in the whole of west Polynesia.

127 Both specimens are part of a very fine Oceanic collection in the Pigorini
 [122] Museum of Ethnology and Prehistory in Rome and the Museum's Director, Dr. P. Sestieri, has kindly allowed me to publish these notes and drawings. The adzes were acquired from J. F. G. Umlauff of Hamburg in March 1886 by E. H. Giglioli, whose collection forms the major part of the Pigorini Museum's Oceanic material. A feature of the Giglioli material is the detailed information on the labels which gives provenance, tribal names where known and references to descriptions of similar specimens in the literature. Giglioli's labels can be considered an accurate record of Umlauff's informa-

¹ Golson 1959:3.² Golson 1957:7.

tion so that only the latter's localisation can be open to doubt. Since the place-names concerned imply familiarity with the localities, it seems probable that they may be correct. 127

The larger of the two adzes No. 1089 from the Hahake (Fig. 1) is a large one of light fawn volcanic stone. Both front and back are curved longitudinally, giving it a hollow back, while the angle of the straight bevel is quite steep. The front and front edges of the butt have been flaked and reduced in a curve to create a marked tang or grip without, however, reducing the edges of the sides and back. The line of distinction between the blade and the butt appears as a curve on either side while the blade itself is set at a marked angle to the butt. There is a suggestion of a lug at the poll and almost a flange on one side, beyond which there has been further reduction of the grip. The front of the blade tapers considerably and like the other blade faces is ground. The label has the following information on it: *Toki enorme ascia litica di tipo speciale contallone Da Hahake NE dell'isola Tongatabu, Polynesia. Acq. da Umlauf a Amburgo 20.11.1886 No. 1089 E. H. Giglioli.* A translation of the first sentence is as follows: "Enormous toki stone axe of special type with heel from Hahake NE of Tongatabu Island, Polynesia." 412
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[324]

The second specimen is from Eua (presumably from Eua and not Eua Iki) and like the Hahake adze is of a similar stone. It is much smaller and in side view shows some of the same characteristics: blade set at an angle to the butt, steep bevel angle, hollow back and distinctive grip which has a definite lug at the poll. Reduction of the sides and front have formed

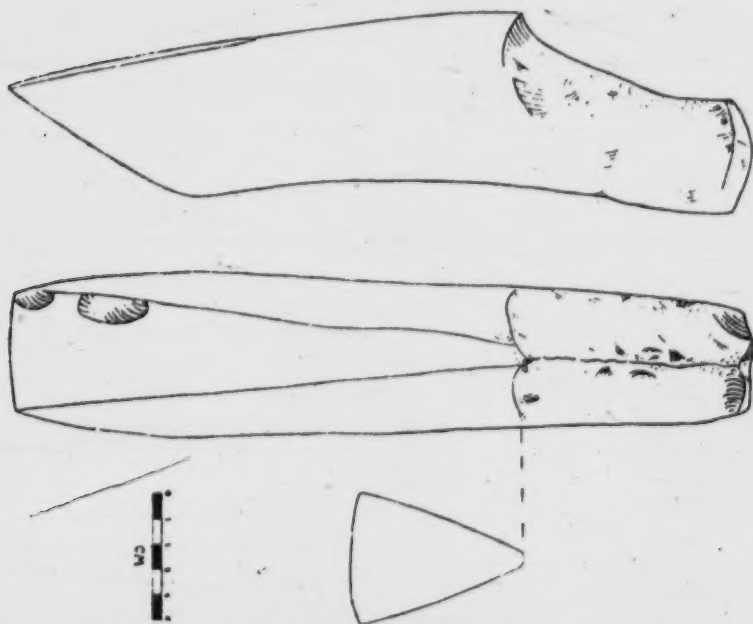


FIG. 1

Hog-backed adze with grip, from Hahake, Tonga.

412 a ridge along the grip and the poll tends to be pointed when viewed from
 [324] the front. The front of the blade is straight and not curved as in the other
 specimen and like the bevel is ground while all other surfaces on the adze
 are flaked. The cutting edge is curved slightly whereas the other adze has
 a straighter one. The bevel curves slightly towards the cutting edge. The
 label reads: *Toki ascia litica con tallone da Eua, isole Tonga, Acq. da*
Umlauff 20.11.1886 E. H. Giglioli. No. 1090. A translation is similar to
 the first: "Toki stone axe with heel from Eua, Tongan Islands." This adze
 (see Fig. 2) also has a label with the name J. F. G. Umlauff, Hamburg,
 on it.

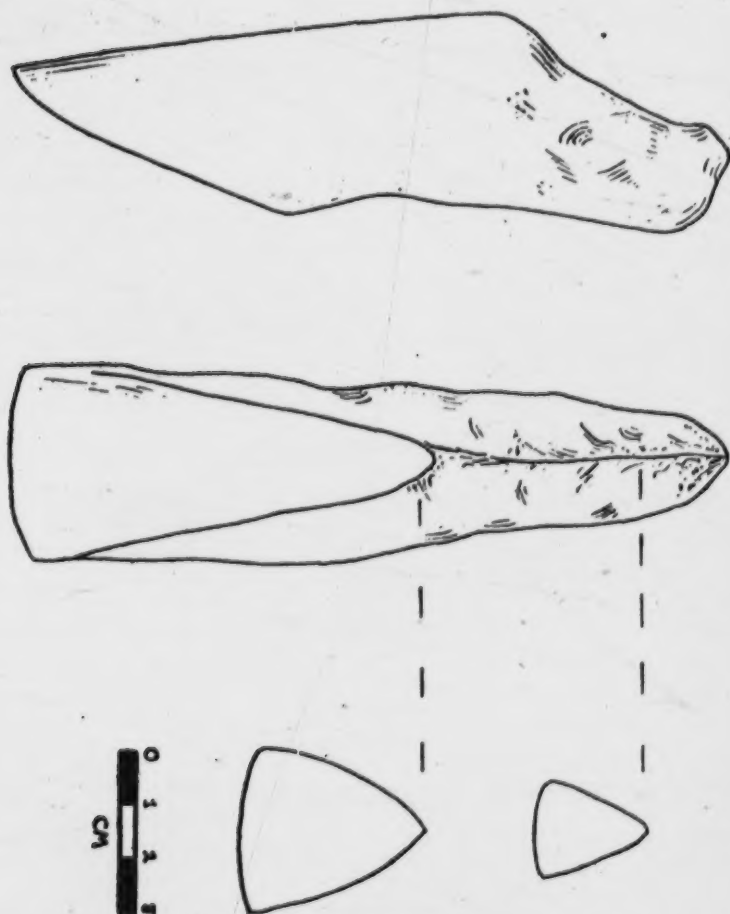


FIG. 2

Grippped hog-backed adze from Eua, Tonga.

MEASUREMENTS

	No. 1089 Hahake	No. 1090 Eua
Total length	290 mm.	132 mm.
Length of blade	204 mm.	93 mm.
Width of cutting edge	47 mm.	35 mm.
Width of poll	43 mm.	Pointed
Length of bevel	80 mm.	57 mm.
Width butt shoulder	55 mm.	30 mm.
Thickness butt shoulder	70 mm.	36 mm.
Thickness at poll	45 mm.	18 mm.
Thickness at chin	57 mm.	34 mm.

The terms used in this description follow those put forward to the New Zealand Archaeological Association by Janet Davidson whose article^a presented the findings of a study group from Auckland University Archaeological Group.

Although these Pigorini specimens are from an ethnographic collection, the presence of this adze type in two separate Tongan localities is significant. It offers some possibility of excavating the type as part of an archaeological assemblage in that region, and if this possibility is realised then its cultural affinities will be more clearly understood.

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^a Davidson 1961:6.

Tooi, Teeterree and Titore

BY ORMOND WILSON

In the Alexander Turnbull Library hang two portraits, somewhat dark and cracked with age, done in October 1818 by James Barry who two years later painted the more famous picture (also in the Alexander Turnbull Library) of the Rev. Thomas Kendall with Hongi and Waikato. The 1818 portraits depict young men, dressed in conventional European style, clean shaven and apparently without tattoo. Their names are given as Tooi and Teeterree.

Tooi appears frequently in the missionary records from 1814 to 1824, and in the accounts of visitors to the Bay of Islands from 1820 to 1824. During the greater part of the years 1814-19 he was abroad, in New South Wales and England. He was Kendall's first instructor in the Maori language when the two met at Parramatta early in 1814.¹ He was with Kendall on

¹ *Missionary Register*, 1815:103, Marsden to C.M.S., 15 March 1814; *ibid.*, 198, Marsden to C.M.S., 20 September 1814.

39: Gerstle & Raitt C,Q-4,5 (1952-1972)
1974 OU9 Tonga OU9

643 taboos were connected with his position. Because no
644 one was allowed to touch his food or body, he was
784 often carried about on a litter, and ceremonies of
obeisance were performed towards him (e.g.
moimoi, wherein the subject knelt down and placed
the soles of the chief's feet on the subject's head,
figuratively showing in humility and respect that he
was beneath the monarch). Some of the things
which were peculiar to the *Tu'i Tonga* included the
fact that he was neither tattooed nor circumcised as
others were, he was referred to or spoken to with a
special vocabulary, he ate the meat of green
coconuts with a distinctive implement (a freshly cut
stick from the *toi* tree), he wore a unique type of
flower garland called the *lala heilala*, and his hair
was trimmed by being singed with a hot coal.⁸

[644] To prevent contamination of the royal line with

[p. 28-B]

39: Gerstle & Raitt C,Q-4,5 (1952-1972) 1974 009 Tonga 009



824
151
442
291
442

39: Gerstle & Raitt C.Q-4,5 (1952-1972) 1974 009 Tonga 009



42
29

ing may be more than offset by increases in overall production because of the longer period of cropping. Shifting cultivation systems, in other words, are fairly flexible, and may be able to undergo a good deal of intensification without change in the technique of maintaining soil fertility.

A brief examination of possible areas of stress within the agricultural system, following the approach of Farmer, Lea and Street (Farmer, 1954; Lea, 1964; Street, 1969), suggests that the above argument might possibly apply to Tonga. Increased intensity of cropping will produce changes in the fallow vegetation, in soil fertility and erosion, and in crop yields, and the severity of these changes gives an indication of the extent to which changes in the bush fallow system are necessary.

Firstly, increased intensity of land use has resulted in some changes in the fallow vegetation. In the densely settled areas the secondary growth consists of grasses and other herbaceous plants, and shrubs such as lantana (*Lantana camara*), and guava (*Psidium guajava*). Only where the fallow period is about four or more years in length do trees such as *Hibiscus tiliaceus* and *Rhus simarubaeifolia* (*Rhus taitensis*) become established. Farmers in Ha'apai complain that more work is now needed to control grasses and other weeds, many of them in fact introduced, and the metal push hoe, introduced into Tonga last century, is now essential for land preparation and weeding.

Soil erosion, another possible indication of stress, is not a serious problem, and in Ha'apai and Tongatapu, the most intensively cultivated groups, the likelihood of erosion is restricted by the porous soil, the underground drainage and the lack of relief. On the other hand, it is widely believed that soil fertility in the more densely settled areas, particularly in Ha'apai, has declined with the increasing intensity of land use. The majority of farmers questioned in areas of high population density felt that yields had declined and blamed the shortening of the fallow period, while some also cited the increased planting of coconuts as a factor. These beliefs are partially supported by the results of chemical analyses made of Tongatapu and Ha'apai soils. On the

102]

[1777] Resolution AND Discovery

[May

On the 10th Feenough dined on

board as indeed he did every day, after we had dined some of his servants brought on board a mess for him, it consisted of fish soup and yams; the fish and soup was brought off in a Plantain leaf. Instead of common water to make the soup they had made use of Cocoanut water in which the fish had been boiled or stewed; this was probably done in a wooden vessel with hot stones. I tasted of it and found it so good that I had afterwards fish dress'd the same way and found it very good though my Cook did not come up to theres.

SUNDAY 11th. Finding that we had quite exhausted the island of all most every thing it produced I this day got every thing off from the shore, intending as soon as the Discovery had recovered her best bower anchor, to proceed to an island called Happi,¹ laying to the NE where Feenough told me I should meet with every thing I wanted and strongly importuned me to go thither before I visited Tongatabu.

Mon. 12
Tues. 13
Wed. 14

The 12th and 13th was spent in recovering the Discoveries Anchor which was at last accomplished² and on the 14th in the Morning we weighed anchor and steered for Aghao,³ with a view of passing to the NW of the small islands that lay to the North and NE of Anamocka,⁴ as I could not be assured of a passage amongst them. Feenough and some others remained on board till near noon when they embarked in a Canoe and stood in amongst [the] islands.⁵ At 4 PM being the length of Ogodoo⁶ we steered to the north, leaving Omattafoa⁷ and Aghao on our larboard, keeping along the West side of a reef of rocks which lay to the westward of Ogodoo, till we came to their no[r]thern extremity round which we hauled in for the island with a design to anchor for the night, but it came upon us before we could find a place in less than 55 fathom water, and rather than come to in this depth I choose to spend the night under sail.

¹ Ha'apai is the penultimate northerly group of Tonga, not a single island. Clerke got it as 'henua Arpi': 'henua' = conventional Tongan *fenua*, cf. Tahitian *fenua*, Maori *whenua*. He adds, '... the word Arpi I find in their Language bespeaks a cluster or Group of any thing wherever it is applied'.—17 May. Here he has, quite intelligibly, been confused by another word, 'api' 'api', which means crowded or full (as of a road or a basket).

² 'On Tuesday Afternoon chiefly by means of some Oyl thrown on the Water which rendered the Surface so smooth that the Anchor was seen at the bottom altho' in 17 fathoms, and the position in which it lay discoverd.'—Edgar, 8 May.—'This Anchor may in the course of the Voyage be of such Consequence that I am determin'd nothing but a conviction of an impossibility of getting it, shall send me away without it.'—Clerke, 10 May.

[191] ³ Kao, the beautiful cone-peaked island, 3,380 feet high and thus a prominent mark, two miles NW of Tofua. It lies due west of Ha'ano, the most northerly of the bigger islands of the Ha'apai group.

⁴ The low islands of the Kotu or Ha'apai Lukungu group, small, scattered, but linked up with dangerous reefs, shoals, rocks and breaking seas, and without good anchorage. For Cook's complicated track about this group and Ha'apai see Fig. 3.

[502] ⁵ '... their rate of sailing was about 3 feet to our 2, and in turning to windward they sailed above a point nearer to the wind than our Ships when sharp trimmed.'—Burney.

[103] ⁶ Kopa, the westernmost island of its group.

⁷ Tofua.

A [See category 102, p. 104--Analyst]

1777]

TONGAN RAZORS

[113

SUNDAY 25th. In my walk to day I happened to step into a house where a Woman was dressing the eyes of a young child which was blind; the eyes were much inflamed and seemed to be covered with a thin film. The instruments she used were two slender wooden probes with which she had probed round the eyes so as to make them bleed; she had almost finished the operation when I went in so that I saw but little of it.¹ In the same house another women was shaving a Childs head with a Sherks tooth stuck into the end of a piece of stick, she first wet the hair before the razor with a rag diped in water; the operation gave no sort of pain to the Child although the hair was taken off as close as any of our razors would have done it,² I tried one and found it an excellent succedaneum. But the men shave the beard with two shells, one of which they place under a small part of the beard and with the other scrape that part off;³ in this manner they will shave very close, the operation is rather long but no ways painfull and there are men who seem to profess it, and it was as common for to see some of our men sit to be shaved by these shavers, as it was for the Chiefs to come aboard to be shaved by our Barbers.⁴

Finding we got little or nothing where we lay,⁵ I resolved to change our station and wait Feenoughs return in some other place; accordingly in the fore noon of the 26th we got under sail and stood to the Southward along the reef of the island, having 14 and 13 fathom water a sandy bottom. We however met with several detached Shoals, some were discovered by breakers, some by the Water upon them appearing discourlered and others by the lead. At half past two PM having past several of these shoals and seeing more

were said to be at Huahine; and he was to have another one, p. 196 below. '... the man gave such answers & drew the number of the masts upon the sand, as to stagger us & put some confidence in the report, the fellow was very ready to go in our boats to prove the truth of his tale.'—King.

¹ Mariner has an interesting paragraph on Tongan ophthalmia and eye-surgery, II, p. cii: ending, 'Mr Mariner neither saw nor heard of but one man who had lost his sight by disease'.

² 'an absolute falsity [it] will not take it off so [well] as scissors.'—Bligh AL, I, p. 260.

³ 'this is a better [plan] and they cut their bea[rds] off pretty close.'—Bligh AL, I, p. 261.

⁴ 'none of our Sailors could bear it & none more than once try[d] how they liked the meth[od].'—Bligh AL, I, p. 261. Cf. Ellis, I, p. 93, on Tongan feelings in the matter: 'This operation [with shells] however is rather painful and tedious, and observing how expeditious and clean we performed it, they were desirous of trying it also; and it so far exceeded their expectations that scarce a day passed without plenty of customers.'

⁵ 'But we have purchased almost all their commodities; they having very few things to dispose of except their young Girls which seems to be almost the only trade at present, & indeed is very advantageous to the men, for they are paid a hatchet for every night's lodging, or a Shirt.—This seems the Common run of trade—but in some instances I have seen two hatchets & a shirt or sheet given for a Nights lodging with a fine young Girl.—The men receive what is agree'd for & leave them on Board, & come for them again the next morning, & if the girls get any thing more they take it away the moment they come.'—Bayly T, 28 May.

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[1777]
Resolution AND Discovery

[July

281 bark just as they are cleaned and beat them out as thin as they will
 [42] bear without any regard to form. The Mallet is of the same shape as
 that used at Otaheite, each side being three inches broad, one of
 which is smooth and the other three marked length ways with five or
 Six grooves, or furrows. I never saw a piece of cloth come from under
 the Mallet of more than two yards in length and a yard or a yard
 and a half wide, but more generally not a fourth part as big, to make
 larger pieces requires a different process. They have a large piece of
 wood made out of the trunk of [a] tree split in two, one side is made
 round and smooth and the other hollowed out; the round side is
 fifteen or eighteen inches over and the length of the log is equal to the
 broadest cloth the family it belongs to makes. On the round side of
 this log they fix platens, or patterns which are made of the leaves of
 the Wharra tree plated one into another, and stitched, or worked
 over with the fibres of Cocoanut husks by which the pattern is
 [38] formed so as to give an impression. Over these they spread very
 [82] smooth the cloth, and bring it to the breadth they intend it by pasting
 one piece to another with a fruit which they call ¹ it is
 used when green, is something larger than a current berry and is an
 excellent gluten.¹ The work women hold a bunch of them between
 her teeth from which she plucks one when wanted. Over this first
 cloth is pasted a second and some times a third if the cloth is in-
 [38] tended to be thick, the last is a [1] ways the best. After all the holes,
 [82] if any, are repaired by pasting on patches, the whole is gently rubbed
 over with a sort of varnish, or oily substance, which is expressed from
 the bark of a tree called by them ². At the same time
 this is laying on they press the Cloth with the hand so that it receives
 [38] the impression of the pattern. The varnish presently dries and is of a
 [82] light brown Colour, if they want it darker, they mix with it, more or
 less, of the soot that is produced by burning an oily nut the same as
 serves for Candles at Otaheite.³ The first length being finished they
 remove it of the block and begin with another, thus they continue
 pasting one piece to another and working one length after another

¹ The viscous juice of a berry called 'Toō', says Anderson, with the note, 'This is the Cordia'. Tou in Tahiti and other islands is *Cordia subcordata*; but in Tonga, according to Churchward's dictionary, is *Melochia odorata* (the student who wishes to confuse himself may consult also Yunker's *Plants of Tonga*). Churchward has a second definition, in which the parboiled fruit of *Melochia*, dipped in water, was formerly used as *tea* for pasting tape—*see* thus apparently being the paste. But Anderson and Cook must have seen the process.

² "... a juice extract'd from a tree call'd Kokka'—King. '... the soft bark of the coca tree and the *teei-teei* tree, either of which when wrung out, without water, yields a reddish brown juice, to be used as a dye.'—Mariner, II, p. 204. Coca = Koka, *Blackfia javanica*; *teei-teei* = Tuitui, or candle-nut, *Alourites moluccana* (the Tahitian *tutu*).

³ That is, the candle-nut, from the bark of the tree of which came the original lighter brown.

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TONGAN MASONRY

[173

till it is the length they intend it. The hollowed side of the log of wood is to receive the ends of the unworked cloth, so that they may be out of the way of the work women. They have of this cloth of different degrees of f[i]neness, according to the bark on which it is made; the finest is made of the Chinese paper Mulberry tree.¹ The Courser sort of which they make very large piec[e]s does not receive the impression of any platen, but is made on the log only.² Of the finer sort, they have some that is striped, chequered and other patterns of different colours, but how these Colours are laid on I can not say as I never saw any of this sort made.³ All these sorts will resist water for some time and that which has the strongest glaze will resist it the longest.

The next considerable Manufacture is matting in which they exceed all the places I have been at both in texture and beauty. Many of those which are made of the bark of the Poerou⁴ so far exceed those they have at Otaheite, that they are not a bad article to carry their by way of trade. They also excell in making baskets, some are exceedingly neat and they have of them of many different patterns. It is almost needless to say that they make ropes and lines of all sorts, Nets for fishing, fish-hooks and all manner of fishing geer with the greatest facility. But in what I think they most excell in point of workmanship, is in the building their Canoes, for an account of which and the manner of Navigating them I refer to the narrative of my last voyage.⁵

Masonry Masonry I have seen none but in the walls that inclose their Morais and their is nothing extraordinary in them but the size of the Stones, some of which are ten or twelve feet in length, four or five in breadth and one or more in thickness.⁶ I examined several of these stones and found them composed of Coral sand and small Marine shells, and therefore concluded that they had been hewn from of the surface of the coral rocks. But even to do this with thier tools is no little work for before they got Iron they had only adze[s] of stone, a chissel of bone; a coral stone and sand and the Skin

¹ *Broussaisia paprifera*, Tahitian Aute, Tongan Hlapo. The dyed cloth thus described is properly called *agatu*, not *tapa* as in the other islands.

² It was made from the bark of the young breadfruit tree, Mei (Tahitian Uru). This plain cloth the Tongans called *tapa*; it was, says Mariner (II, p. 206), 'seldom worn, but is chiefly used for various purposes at funerals'.

³ With a small stick used as a brush, as is still done.

⁴ This was the Tahitian name, Purau, for the common *Hibiscus tiliaceus*. The Tongan name was Fau.

⁵ II, pp. 263-3, 447-8.

⁶ Cook's misuse of the word 'moral' (*mala's*) has already been noted. The reader interested in the remarkable structure of *fa'itika* and *langi* can do no better than refer to the extended account in McKern's *Archaeology of Tonga*, pp. 30 ff.

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[July

333 of a sting-ray fited upon a piece of wood, served as a polisher; for
 412 small work they make use of Sharks teeth and Shells.

237 *Tillage* The Instruments for *Tillage*, in which they may be said
 241 to vie with Europeans, are nothing more than Pickets, or
 412 Stakes of different lengths according to the depth they have to dig,
 they are flaten'd and sharpened to a edge at one end and the largest
 have a short piece fastened transversely a little above it, for pressing
 it into the ground with the foot. With these, though they are not
 more than from two to four inches broad, they dig and plant ground
 of many acres in extent.

721 *War and Weapons* The art of War is not unknown to these people
 though perhaps they practise it as little as any
 nation upon earth; for except their occasional disputes with Fidge[e],
 713 before mentioned, they seem to have no Enemies round them. Their
 411 Weapons are clubs of defferent sorts, in the making, or rather Orna-
 531 menting of which they spend much time, Spears and darts; they have
 bows and arrows but they seemed to be designed only for amuse-
 ment and not as a Military weapon.¹

642 *Government* Of the nature of Government we know no more than the
 general out line, a subordination is established among
 them that resembles the feudal system; but of its subdivisions of the
 Constituent parts and in what manner connected to form one body
 643 politic I confess my self totally ignorant.² Some have told us that the
 565 power of the King is unlimited and that the life and property of the
 421 Subject is at his disposal; but the few circumstances that fell under
 our observation, made more against than for a dispotic Government
 though we saw instances of both, and some that clearly shewed that
 643 the lower order of people have no property but at the will of their
 634 masters.³ On the other hand *Marriwaggy*, *Old Teobough* and *Feenough*,
 acted each like petty Sovereigns and frequently thwarted the meas-

¹ They shot pigeons with them, as an aristocratic diversion.

² Not without reason, considering the complicated nature of the Tongan power-
 structure. I do not amotate some of the sentences that follow, in which Cook repeats
 statements already annotated, however erroneous they may be.

³ "... we saw instances, where present Passion seem'd to be their only guide, & where
 had they kill'd the Objects of their wrath they woud have been amenable neither to justice
 nor to a superior; but as the common people by no means appear dispirited or any way
 broken by harsh or cruel treatment, It seems pretty certain that the mildness & benevo-
 lence of their masters, insures them against an ill use of their Authority. ... Upon the
 whole the Friendly Islanders have the appearance of enjoying most of the Advantages
 arising from a regular Government, few even surpass them in the great order they observe
 on all Occasions, in their ready compliance with the Commands of their Superiors, & the
 great harmony which subsists amongst all ranks; & none in the general sweetness &
 mildness of their tempers. We see many things worthy of imitation, few of blame; wou'd
 to God they cou'd say the same of us, but we have left them an incurable disorder which
 will for ever embitter their quiet & happy lives, & make them curse the hour they ever
 saw us."—King.

[1777]

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[June

249 branches considerably with large heart shap'd leaves and jointed stalks. The root is the only part us'd, which being dug up is given to the servants that attend, who breaking it in pieces scrape the dirt off with a shell or bit of stick, and each begins & chews his portion which they spit into a bit of plantane leaf: and the person who is to prepare it collects all these mouthfulls and puts them into a large wooden dish or bowl with three or four feet, & adds as much water as will make it of a proper strength. It is then well mixd up with the hands, and some loose stuff which mats are made of thrown on the surface, which being turn'd in intercepts the fibrous part and is wrung hard to get as much as possible out from it, when it is given to some of the by sitters who sometimes prepare a weaker sort from it for themselves by chewing it again. They then begin to distribute it in little cups made of a bit of plantane leaf tied at each end, but where the company is large & respectable as our present one was the person who distributes it calls out to know who the servants shall carry it to, and is commonly directed by one person belonging to the chief who gives the Kava. Each person has a clean cup which they throw away as soon as it is drank, and the quantity is commonly about a quarter of a pint, though they sometimes venture on two cups if much has been made.

276 The immediate effect it produces is not perceptible on these people who use it so frequently, but on some of ours who try'd it, though so nastily prepar'd, it had the same power as spirits in making them drunk, or rather producing that kind of stupefaction in consequence of using Opium or other substances of that kind. It should be observ'd at the same time that though they have it always fresh prepar'd—and I have seen them drink it seven times before noon—it is nevertheless so disagreeable or at least seems so that the greatest part of them cannot swallow it without making wry faces and shuddering afterwards.

114 After this we set out from Mooa and meeting several Canoes in our way Poulaho call'd to them and took what fish he pleas'd. We din'd on a small island call'd 'Onne'vy¹ about a league off the mouth of the bay, where Poulaho said there was good water but we found as was said before that these people have very little knowledge of such a valuable article for there was none of it tolerable to us. This island is quite in a natural state, being only frequented as a fishing place, and has nearly the same productions as Palmerstons island with some E'toa trees.

114 On returning to the ship we pass'd a curious large rock which seems to have been thrown upon the reef where it stands by accident.

¹ 'Onevai.

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[July

302 over the hair. The other I believe is done in the same manner with
824 turmeric root. They are so exceeding whimsical in their method of
302 wearing it that it is hard to tell which is most in vogue, though the
greatest number perhaps are those that have it cropt short. Others
have it cut off one side of the head while the other is long, some with
only a piece cut out as far as the crown or perhaps shav'd that far,
and others have it entirely cut off except a single lock which is left
commonly on one side, or it is suffer'd to grow its full length without
any of these mutilations. The women except a few wear it short, but
the long hair is such an ornament to the last as well as the men who
wear it so that it is surprizing the practice is not general. Those who
wear it in that manner take uncommon pains in having it comb'd,
each small parcel being carefully seperated from the rest, and I have
seen a woman whose business it commonly is take an hour and a half
to dress a mans hair in that manner. The men have their beards cut
302 short which is done with two thin shells, one of them with the edge
237 broke into small notches being plac'd under the hair that is to be cut
off, and the back of the other press'd & drawn along the intercepted
part cuts it off very short. Both men & women have the arm pits
bar'd in the same manner, but when they cut their hair or shave it
304 very close the operation is perform'd with a sharks tooth. The men
are stain'd from about the middle of the belly to about half way down
[237] the thighs with a deep blue colour. This is done by what we might
[412] call puncturation or ingraining with a little flat bone instrument cut
[82] full of fine teeth & fix'd in a handle. It is dipt into the staining mix-
ture, which is prepar'd from the soot of the Dooedooe and struck into
the skin with a bit of stick untill the blood sometimes follows, and by
that means leaves such indelible marks that time cannot efface them.
They trace in this manner the various lines & figures that fancy
suggests which in some are very elegant either from their variety or
disposition, but as the practice is quite universal it does not appear
whether it is intended as an ornament, or merely a compliance with
one of those old customs for whose institution no satisfactory reason
can be given in after times. The women have none of this about their
bodys but often a few small lines or spots on the inside of their hands.
[75] The men are all circumcis'd or rather supercis'd, as the operation
consists in cutting off only a small piece of the foreskin at the upper
part, which by that means is render'd incapable ever after of
covering the glans, a circumstance which is all they aim at as they
[765] say it is practic'd merely from a notion of cleanliness. Besides the
marks remaining on the cheeks after performing the Tooge there are
great numbers who have concentric circles upon their arms call'd

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[July

241 of the island is in the highest state of cultivation. The large extent of
 [31] the Plantane fields was taken notice of already, and the same may be
 said of the Yams, these two together being at least as ten to one to all
 the other articles. In planting both these it does not appear they turn
 [42] over the ground as we do, but in a field that has lain waste and is
 covered with grass they dig small holes for their reception, and after-
 wards root up the grass with a flat narrow wooden instrument call'd
 Hōōō,¹ which in this hot country is quickly depriv'd of its vegetating
 power and soon rotting becomes a good manure. They are planted
 in rows by a line such as our Gardiners use, in such a manner that
 which ever way you look the rows present themselves regular and
 compleat. The Plantanes are usually three paces asunder, the Yams
 two and the Jeejees one. The first are shoots from the root of the old
 tree, which when weak they often defend with a sort of basketing laid
 over them, and the Yam tendrils at first shooting up are frequently
 245 supported on short bits of sticks. The Cocoa nuts and bread fruit trees
 241 are scatterd about without any order and seem to give them no
 trouble after they have attaind a certain heighth. The same may be
 said of another large tree which produces great numbers of a large
 roundish compress'd nut call'd 'Eēēē,² and a smaller tree that bears
 a rounded oval nut two inches long with two or three triangular
 kernels, tough and insipid, call'd Mabba,³ most frequently planted
 near their houses. The Kappe is commonly regular[ly] planted and
 in pretty large spots, but the Ma'whaha is interspers'd amongst other
 things, as the Jeejee or Yams, the last of which I have frequently seen
 in the interspaces of the Plantane trees at their common distance.
 241 Sugar cane is commonly in small spots crowded closely together, and
 248 the Mulberry of which the cloth is made, though without order, has
 [249] sufficient room allowd it and is kept very clean. The only other plant
 they cultivate for their manufactures is the Pandanus which is
 commonly planted in a row close together at the sides of the other
 fields, and they consider it is a thing so distinct in this state that they
 have a different name for it,⁴ a proof that they are very sensible of the
 great changes brought about by cultivation. Whether the same re-
 mark may be applied to the Mulberry I am not certain, for it seems
 doutfull if ever they knew it in any other than its present cultivated
 one, as it never flowers; at least there was none of the old trees from
 whence they could propagate it seen, whereas the Pandanus is one of
 417 the most common in the country. Their fences should be considerd

¹ *hoo*.² *I6, Inocarpus edulis*.³ *Mapa, Diostyros lateriflora* or *D. ellipticifolia*.⁴ The Tongan vocabulary at the end of the third volume of the printed *Voyage* gives one of the meanings of 'Kecai' [*kis*] as 'the cultivated Pandanus'.

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TOOLS AND HANDICRAFTS

[939

rains hard in the day they are guided by the swell of the sea & wind. 484
 As another proof of the distance or at least of the stay they make at
 some places, they always carry a considerable quantity of Cloath, 502
 matts &c and provisions, the last of which they dress on a sort of 821
 hearth made of sand & stones plac'd near the fore part of the stage. 252
 The number of people, amongst which are always several women,
 being at least four times more than is sufficient to Navigate the Boat 505
 implies some other business, though perhaps it may be for the relief of 461
 each other: for here as in all other cases there seems to be such a
 perfect unity amongst them that when they are oblig'd to paddle 533
 from a calm or any other accident, the whole crew and rowers them-
 selves join in songs and a musical recitative to give an agreement to
 their strokes and ease the irksomness of that unvaried labour.

The only tools they have to make these boats are Hatchets, or 442
 rather thick Adzes, of the smooth black stone mentioned before (but 321
 some want the projecting part behind), an augur made of a sharks 237
 tooth fix'd on a small handle, and a rasp of a rough fishes skin laid
 over & fastend on a flat piece of wood thinner on one side with a
 handle. The vast labour they must be at and the time that is spent 396
 with their [boats], being perhaps their most perfect mechanical 348
 production, are probably the reasons for being so carefull of them,
 for they are built and preserv'd under long shades of two sides which
 reach to the ground & incline towards the top, so that the ends which
 are both open represent a half ellipsis on its base; but when that
 cannot be done they always cover the deck'd part with Cocoa leaves
 after they are haul'd on shore to prevent the sun hurting them.

The same tools are all they have for other works, if we except 442
 different shells which they use as knives, but there are few that 237
 require these unless it is some of their weapons, the other articles
 being chiefly their fishing materials, cordage and a few others. The
 Cordage is made from the fibres of the Cocoa nut husk, which though 283
 not more than nine or ten inches long they plait about the size of a 824
 quill or less to any length they please, & roll it up in balls from which
 the larger rop[e]s are made by many of these being tied together and
 twisted. The lines they fish with are made from the 226
 and are as strong and even as the best cord we make, resembling it 283
 almost in every respect. Their other things for that purpose are large
 and small hooks, made with a pretty straight back and a point fix'd
 on the inside near the end. The last are made entirely of pearl shell, 321
 but the first only coverd on the back with it, & the points of both 391
 commonly of tortoise shell, those of the small being plain the others

¹ Tou, not the *Malachia* but *Pipturus argenteus*, widely used for this purpose in the Pacific.

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TONGAN FOODS

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not unlike thick Sago or jelly from the Ma'whaha root, which doubtless affords a great quantity of nourishment; but the most palatable dainty, at least to us, is the bak'd root of the Sugar cane & Jeejee¹ which is but seldom met with. A dish of Vegetable and another of fish or other animal food commonly satisfys them, but we have seen Poulaho have four besides his yams for dinner, as bak'd pork, the Crow of the hog dress'd differently, the Talo tops as greens boild or rather sodden in oil or fat, and a bak'd Cuttle fish. 262

They seldom eat in their houses, but in fine weather sit down under the shade of a large tree and have their meal brought in baskets of Cocoa leaves to them, which is commonly divided into as many portions as there are people and laid before them in plantane or other leaves, with a small reserve in case any one should wish to eat more than his first share. They have some hollow'd wooden dishes but are not so commonly us'd as the leaves. Their only knives & forks are a bit of Bamboo or their hands, but many of the principal people have each mouthfull (which ar[c] commonly very large) of fish or pork prepar'd and laid upon a piece of yam by a servant, so that they have only the trouble of putting it into their mouths. In general they are moderate eaters, but their method of feeding does not seem to agree with their personal cleanliness, as they make no scruple of eating their pork (which is seldom dress'd about the head & neck from placing it in a round oven) quite raw and bloody and very frequently fish just as they are caught, as well as all sorts of shell fish, some of which are reckon'd a great delicacy in that state especially a particular part of the large Cockle. They are also very fond of every thing that is fat, and to procure that will even dress their shark cut up into large pieces by putting a large piece of the liver between two pieces of the fish, which doubtless yields a very rank oil: but what is worse they will often eat the vermin from their own heads, and have been seen to lick up the matter squeeze'd from a boil with their fingers. Their drink at meals is the juice or water of the Cocoa nut, a natural liquor so agreeable that all who taste must prefer it unless habituated to some pernicious artificial one. Nature seems in some measure to have supplied her scanty allowance of water to them from fitting their country to produce large numbers of these, and in great perfection; but it is not the only provision in this case, for they often scrape down the kernel of the nut and by mixing it with water make a fine milky liquor which renders even that naturally disagreeable article pleasing. When the meal is finish'd they always 264

¹ This reminds one of the New Zealand use of Ti, *Cordylina australis*, the brother of the 'Jeejee'. 515

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283 Their Cordage is another considerable article which they make of the rind of the Cocoa nut. Some of this they have of a thickness of a
 [126] 4 or 5 inch rope, which is used in the rigging of their Canoes; fishing
 [284] & other small Lines they make exceeding neat and strong from the Fibres of a Plant¹ & of these Lines they make excellent fishing Nets.

285 These people excell in making baskets, of which they have 3 or four different Sorts & sizes all made of the rind of the Cocoa nut; one kind is made very strong which is that in most common use, another which is more for Shew are made exceedingly neat & beautiful with white beads & sometimes red feathers worked in them, these we esteemed as some of the greatest Curiosities among them; a third sort are constructed in an odd manner & have a very antique Appearance which made us compare them to Cathedrals²—they have other Sorts still but those above mentioned are the principal. Their other
 391 Manufactures consist of their weapons of war which have been
 412 already mentioned, their fishing Tackle of various Sorts, much like those of Otaheite, their working Tools which consists of an Adz
 301 made of blue Stone, a Shark's Tooth fastened to the end of a Stick for a graving Tool, and Files and their Jewellery, such as Necklaces of
 306 various Sorts, some made of small shells of various colours & prettily
 237 disposed, others of the Legs of fowls, which however odd they may Sound, these people contrive to make into ornaments for their women's Necks and are no bad ones.

501 Their Canoes are of two Sorts, double & single and of a very curious construction & well finished & must cost them much Labour, they consist of several pieces of plank very ingeniously adapted to each other & sewed together on the inside of the Canoe; the single ones are in general large enough to hold six people, have an outrigger to them & are covered over with a deck at the Head and Stern under
 [531] which they stow the different articles they carry in them. On these decks they fasten 10 or a dozen white Shells as ornaments & at the stern there is a Support for a fishing rod which they generally carry along with them. The double or sailing Canoes are built large & strong with a Stage, on which a Hut is built. Some of them are capable of carrying 80 or 100 Men & can keep the Sea a long time
 [285] in these Latitudes. Their Sails are made of strong Matting & have
 [531] generally the Image of a Cock upon them.

534 Their musical Instruments consist of a Flute, a small instrument called by the Natives Meemecah,³ and Drums. The Flute is made

[821] ¹ Tou, *Pipturus argenteus*; or Pau, *Hibiscus siliaceus*.

² It is hard to guess what Samwell means by this—perhaps the top edge of some baskets, like an immense saw-tooth.

³ *umika*, Pan-pipe.

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THE TONGANS

[1039

nearly like that of Otaheite & they blow into it through the Nose, but make very indifferent Music of it. The Mimia is made like the Pipe of Pan with nine fistulæ tyed together of different Lengths, they draw them along the Mouth & blow into them, but I never found that they made any thing like music out of them. The Drums are made of large cylindrical Pieces of wood like a Garden roller & excavated, which must cost them much trouble to do with their Tools; a Slit just wide enough to get the Hand in is made from one end to the other & there is no hole at either end, they beat them with 2 Sticks. Other musical Instrum^{ts} if such they may be called have been already mentioned in the account of the Dances at Happai.

Their carving they execute very neat, this art is chiefly employed by them in ornamenting their Clubs, which they carve all over with the shape of Men, Birds, Dogs & Fish &c. in different parts, and fill up the whole with strait & spiral Lines in various directions & they sometimes inlay them with bone, as they likewise do their Stools that they use for pillows tho' they never carve them, they also carve the handles of fly flaps in the same Manner that they do their Clubs, & they have small sticks carved two of which they put between their fingers & clap together in the same manner that Children in England do with Stones. They have small Images of Men & Birds made of Bone which they sometime[s] wear about their necks as ornaments. They polish their different Manufactures of wood with a file which is made of a piece of wood covered with the Skin of the Shark.

The general appearance of the Island is very beautiful it being entirely covered from one end to the other with Cocoa nut, Breadfruit & other fruit trees, it is low, there being not a single Hill or any considerable rising Ground upon it; it is long & narrow being about in Length & broad. On advancing into the interior part of the Country nothing can be more pleasing than the appearance of their Houses and Plantations & of the Cocoa nut, breadfruit and Plantain Trees loaded with fruit & the large fields of Yams which are to be met with all over the Island, over which you travel along delightful Lanes between the Wicker Partition of the different inclosures, & here & there is a burying place and a large building much larger than the dwelling Houses, which seems appropriated as a public Hall for the use of a district to meet in to transact public Business or to perform their Dances, or as they were situated near the burying places they perhaps perform some Ceremonies in them at their Funerals. There were generally two or three Seats hewn in the Pillars that supported the Building which seemed to be for the reception of the Priests or Chiefs; in these Houses they

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344 kept their Drums. The soil is rich & good & the Climate equal & fine like most others situated in the same Latitude, where there is no cold Weather & the Inhabitants are not oppressed with Heat.

134 The Chief Produce of the Island is Cocoa nuts, bread fruit, Plantains & yams & Sugar Cane, all which the Country affords in great Abundance, & there are some Shaddocks, but not near so many as at Middleburg. Their Hogs are not so large as those of Otaheite nor so numerous, tho' we found plenty to supply the Ships while we staid among them, there are but few Dogs & many Rats on the Island and large Batts. They were very fond of our Cats some of which they stole, for which 2 or 3 of them were flogged on board the Discovery more than once. They have Variety of Birds some of which they used to bring on Sticks to the Ship to sell, such as Pigeons & a beautiful small green & red Parrot and they have plenty of Poultry about their Houses.

302 The Inhabitants of these delightful Isles are a handsome fine Race of People; the Men are rather above the common size, strong & [141] exceedingly well made, of a dark copper Complexion with black [142] Hair naturally, I say naturally because they daub it over with a Paste made of coral Powder which changes the Colour of it in different places into yellow, so that it is of a mixed Colour yellow & black, and this no doubt is the yellow Hair which Dalrymple takes notice of as having been seen by Quiros & other former Navigators to the South Seas, & which he supposes to be natural & therefore concludes that they are a different race of Men from the other South Sea Islanders who had not this custom among them, and therefore produces it as an Argument for the existence of [a] Southern Continent & that these were some of the natives. This practice is not confined to [171] these people but common among other Islands in these Seas. They 304 tattaw or mark their Loins & Thighs in various Lines according to their fancy, tho' there is an uniformity or standard to which they all approach like the Otaheiteans in tattawing the Breech. Some of 302 them tattaw the Glans Penis. They all shave their beards, which is done with 2 small shells with sharp edges one laid under the Hair [237] while they cut the beard with the other, & by this means they perform the Operation with expedition & get the hair off tolerably [42] clean, tho' they always preferred our Razors when they could prevail upon the Ship's Barber to trim them.

291 Their Dress consists of a piece of Cloth tyed round the middle which descends as low as the Knee with sometimes a matt over it; others wear what they call a Pooraw¹ which is a Substance between

¹ pulou.

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[1367

edges of each plank which are brought to join, thro which they are lash'd 175
to one another. The large sailing Canoes are two single ones join'd to-501
gether (but each of much larger dimensions than what we have describ'd)
by strong rafters lash'd across, over these is built a platform or stage
extending in length from the deck of one Canoe to the other, & in breadth
projecting considerably beyond their sides; on the After part is placed a
hut resembling a Cylinder divided lengthways & resting on it inside, or
when a shed is placed on the side, it is a longitudinal section of the above
hut; here sleeps the chief & his Women & here their Goods are stowd
away. The Mast is short in proportion to the Vessel & placed in one of the
Canoes, before the middle part, inclining forward & to the opposite side,¹
some fix'd & others made to unship; the Sail is tri-angular, the longest side
fix'd to a Yard about twice the length of the Mast & hoist'd up to it; the
Sail has then an oblique direction, the broadest part uppermost, & ending
in a point coming down with the yard a good way before the Mast almost
close to the Stage. They have a stout boom, which they use as an outrigger,
well secur'd by strong ropes from the Mast head & from each end of the
Canoe: this, when it blows fresh & the boat heels, some of the Men go out
& stand upon. The size of one of the largest I saw was about 70 feet long,
the Extream breadth of one of the Canoes or boats about 3 feet & the
depth 5½, the length of the Stage 30 feet & breadth 16½. The measure of a
Sail of middling size, in that part fix'd to the Yard, between 50 & 60 feet;
the broadest part of the Sail, or base, between 30 & 40 & the lower side
from 45 to 50. These Canoes are of diff^r sizes & will carry from 30 to 70
people. They have also single sailing Canoes with the outriggers very stout.
The Tools with which they perform their works in Architecture & boat
building are a stone Hatchet, an Augur made of Sharks teeth & rasp made
of rough fish skin. . . . [412] [237]

Marriage. Whether Monogomy or Polygamy is the mode among these 595
people we cannot positively say, or whether their engagements are bind-565
ing, or attended with any ceremony or contract; the bulk of the people had
only one Wife, but Powlohow & Feenow had several women, whether
considered as lawful wives or only one & the rest Concubines is a matter of
doubt to us. It should seem from Powlohow's having elder sons by other
women than the one who is to succeed him, that some of his Women had
a superiority over the others. Where a free intercourse with the Sex does
not appear Criminal, & where there is little appearance of delicacy in their
Amours, their Marriage Contracts are not perhaps binding; the Men are
free from jealousy, & made no scruple of our having intimate Connexions
with the Women, & they convert'd this intercourse to their advantage by
fixing a price upon it; the Women when the Ship was here before were by
no means backward on their parts; but now there is an evident disgust on
their sides which however avarice gets the better of; by no means all the
women are to be understood to be purchas'd by our riches, all the married

¹ The foregoing details indicate that the canoes here described were *tongiaki*, not the
Fijian-influenced *kalia*, with (for instance) the longer mast. [177]

[437 cont.]

175 and pointed; some had long handles and a blade which resembled the
411 blade of a fleam; others were crooked, knobbed, &c. But by far
175 the greatest part were carved all over in many chequered patterns,
411 which seemed to have required a long space of time, and incredible
531 [412] patience, especially when we consider, that a sharp stone, or a
piece of coral, are the only tools which the natives [438] can
employ in this kind of work. All the different compartments
were wrought and divided with a regularity which quite surprised
us, and the whole surface of the plain clubs was as highly polished,
as if our best workmen had made them with the best instruments.

175 Besides clubs, they had spears of the same wood, which were sometimes
411 plain, sharp-pointed sticks, and sometimes barbed with a sting-ray's
[237] tail. They had likewise bows and arrows, of a peculiar construction.
The bow which was six feet long, was about the thickness of a little
finger, and when slack, formed a slight curve. Its convex part was
channelled with a single deep groove, in which the bow string was
lodged, and which was likewise big enough sometimes to contain the
arrow made of reed, near six feet long, and pointed with hard wood.
When the bow was to be bent, instead of drawing it so as to increase
the natural curvature, they drew it the contrary way, made it
perfectly strait, and then formed the curve on the other side. The
bow-string by this means never needed to be tense, as the arrow
received sufficient moment by changing the natural bent of the bow;
the recoil of which was never violent enough to hurt the arm. Our
seamen, unacquainted with the nature of these weapons, broke several
175 of them by drawing them like other bows. The immense quantity of
181 arms belonging to the natives, corresponded very ill with the pacific
609
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[460 cont.]

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501

construction. The common small trading-canoes were sharp-bottomed, and ended in a sharp edge at each extremity, which was covered with a board or deck, because their narrow form frequently exposed these parts to an entire submersion, which would have filled them with water without this precaution. They commonly had a slight out-rigger or balancer,

[283]

made of a few poles, to prevent their oversetting. The body of the canoe consisted of several planks, of a hard brown wood, sewed together with strings made of the fibrous coco-nut core, and so artfully joined

[171]

that they appeared to be remarkably tight. The Taheitiens simply bore holes in each plank, through which they pass their strings; but by this means their canoes are always leaky. At Tongo-Tabboo they dub the inside of the plank in such a manner as to leave a projecting list or rim close to the edge, and through this they pass their threads. Along the deck or narrow board at each extremity are placed seven or eight knobs, which seem to be an imitation of the little fins, (pinnulae spuriae) on the belly of bonitos, albecores, or mackarels; and I cannot but conjecture that the natives have taken these swift fishes

[412]

[237]

for their models in the construction of their boats. Though these canoes are commonly fifteen or eighteen feet long, yet they are as neatly and smoothly polished as our best cabinetwork, which must appear the more surprising when we consider that the tools of the natives are

[171]

only ~~knives~~ bits of coral, and rasps made of the skins of rays. Their paddles were equally well polished, of the same wood as the canoe, and had short rhomboidal broad blades, like those of Taheitee. The other sort of canoes were constructed for sailing, and persons skilled in nautical matters acknowledge that they were admirably well adapted for

[171]

this purpose. We saw one of them in Maria Bay, consisting of two joined

175 [470 cont.]

648 venture to determine, though I am inclined to adopt the former opinion.

609 Captain Wallis probably saw Cocos and Traitors Islands in 1767, which
000 he called Boscawen's and Keppel's Isles; but his people did the natives
no hurt, except frightening them with the discharge of a single
musket. M. de Bougainville saw some of the north-eastermost isles
belonging to this group, of which the inhabitants had the same general
character. He called his discovery the Archipel des Navigateurs,

175 justly enough, as many ships have fallen in with it. Since Tasman's

648 time, no other navigator has had any intercourse with the isle of

175 Amsterdam, which he discovered, previous to our arrival. During a

178 space, therefore, of one hundred and thirty years, they have not

materially changed their manners, dresses, way of living, disposition,

175 &c. &c. Our ignorance of their language prevented our obtaining

439 positive proof that they still preserved, by tradition, the memory

[124] of former visitors; but they possessed some nails, which must have

• [412] been brought to the island in Tasman's time. [471] We purchased

one of these nails, which was very small and almost consumed with

rust, but had been carefully preserved by being fixed on a wooden

handle, probably to serve the purposes of a googe or borer, and is

[415] now deposited in the British Museum. We likewise bought some small

earthen pots, perfectly black with soot on the outside, and

suspected them to be memorials of Tasman's voyage; but afterwards

we rather believed that they were manufactured by the natives them-

175 selves. The accounts of Schouten, Tasman, and M. de Bougainville agree

171 with ours, in respect of the agility with which the natives committed

[648] petty thefts. Tasman and captain Wallis have likewise observed their

[304] custom of cutting off the little finger; and according to Schouten's

241 planted is usually of less importance than the first and so on until the land is returned to fallow status. A typical garden sequence is yam ('ufi), perhaps two crops in succession of taro (talo), and then cassava (manioke) is planted until the plot is exhausted. The amount of care given a garden is an indication not only of the amount of care a certain crop might need, but also indicates the social value derivable from that crop. Thus yams receive more care than taro, and so on.

[412] All gardening done in Puke is accomplished with the use of three hand tools: the ubiquitous bush knife, the push hoe, and a long-handled spade. Fallow periods plus whatever nutrients the soil might receive from burning the brush before a first planting are the only aids utilized to refurbish the soil. Commercial fertilizers provided free by [654] the Agricultural Board are, however, now being used on palms. Usually no effort is made to prevent wandering animals from a garden and pigs sometimes do extensive damage.

[731] In some years droughts threaten crops in the dry, cool months from [732] May to November, but irrigation is not practiced and is not practical [312] because of limited sources of water.

241 Most garden work is accomplished by men but wives often assist, [461] particularly in weeding. A Tongan anecdote proclaims that if a man takes his wife to the garden and has her work so that his work will take him toward her, he will be able to work much faster; but the situations both explicit and implicit in their theory are more fiction than real.

[476] Men usually do choose to work together with at least one other man, and work groups of two to four are quite common. Sociability is important

Vava'u: Crosby; near upper rim of steep seaside cliff above Leimatua, May 30, 1953, Yuncker 16060. 137

Niufo'ou: near upper edge of recent lava flow on way to upper rim of main crater, May 16, 1953, Yuncker 15993; on shore of great lake in sector of Futu, Jan. 7, 1952, Hürlimann 667.

Niuatoputapu: on mountain ridge above Vaipoa, Dec. 5, 1951, Hürlimann 355.

Occasional throughout the group but abundant on Niufo'ou. From Indo-Malaysia to Polynesia and now in cultivation in most tropical countries.

Tongan name: toa.

The bark is used in medicines and the hard, durable wood is a favorite in the construction of houses, the manufacture of tool handles, and so forth.

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FAMILY PIPERACEAE

Genus *Piper* Linnaeus

Piper latifolium Linnaeus f., Suppl. Pl. Emendanda, 468, 1781.

Shrub, up to 3 m. or more tall. Leaves suborbicular, shortly acute, base rounded-truncate or cordate, up to about 10 cm. wide or sometimes much larger, glabrous, palmately 11-12-nerved, petiole up to 6 cm. in length, vaginate-winged to near blade. Spikes multiple, axillary, up to 10 cm. or more long and 4-6 mm. in diameter, floral bracts round-peltate, flowers dioecious.

Tongatapu: Forster; Moseley.

I found no specimens of this species, and I suspect that the ones collected by Forster and by Moseley, as reported by Hemsley, are *P. puberulum* (Benth) Benth. Not having these specimens available at the present time, it is not possible to determine their identity. *P. latifolium* is said to occur from the Society Islands westward to the New Hebrides, although it appears to be absent from Samoa and Fiji.

Piper methysticum Forster f., De Plant. Esculent., 76, 1786.

Shrub with thick, woody rhizome, up to 3 m. or more tall, glabrous, nodes swollen. Leaves round-ovate, short-acuminate, base deeply cordate, up to 20 cm. or more long and 15-20 cm. wide, palmately 9-13-nerved, nerves minutely puberulent beneath, petiole up to 3 cm. long, vaginate at base. Spikes leaf-opposed, solitary, up to 5 or 6 cm. long, greenish white.

Tongatapu: Home.

Eua: Lister; cultivated at Fuai plantation near center of island, Mar. 28, 1953, Yuncker 15541.

Vava'u: Crosby; along trail on way to summit of Talau, west of Neiafu, May 23, 1953, Yuncker 16149.

Of ancient introduction. Aside from one or two plantings of less than an acre each, all of the plants noted were occasional specimens about villages or borders of plantations, and the like.

137 'Eua: *Lister*; in open woods along trail between Pangai village and Fuai, Mar. 25, 1953, *Yuncker* 15484.

Nomuka: along road encircling island, Apr. 30, 1953, *Yuncker* 15830.

Lifuka: side of road north of Pangai village, Apr. 25, 1953, *Yuncker* 15740.

Vava'u: *Crosby*; in clearing near coastal cliff along eastern side of island, below Houma village, May 22, 1953, *Yuncker* 16128.

Tafahi: beside road between township of Tafahi and landing place Faihavanui, Dec. 15, 1951, *Hürlimann* 566.

Niuaotupapu: on main mountain ridge above Vaipoa, to the east, Dec. 5, 1951, *Hürlimann* 357; plain southeast of Falehau, Dec. 7, 1951, *Hürlimann* 380.

Frequent throughout Tonga, Malaysia and Polynesia.

Tongan name: *ifi*; varietal names, *ifi mea*, *ifi 'ni*, *monosivai*.

The timber is strong and is used for general construction work, tool handles, tapa pounders, wooden drums, banana shooks, and so on. The fruit is edible. λ

For a discussion of the reasons for using *I. edulis* as the correct name of this species rather than *I. fagiferus* (Parkinson) Fosberg, see Merrill (Chron. Bot. 14: 347, 1954).

Genus *Abrus* Linnaeus

Abrus precatorius Linnaeus, Syst., ed. 12, 472, 1767.

Subwoody, twining vine with slender, glabrous branches with long internodes. Leaves even-pinnate, alternate, leaflets subsessile, commonly 20 to 30, oblong, obtuse and slightly emarginate, base obtuse or cordulate, about 2 cm. long and 6 mm. wide. Flowers small, red or white, several, on very short, swollen, knoblike, terminal or axillary branches; pods several-seeded, seeds handsome, bright red with base black, shiny.

Tongatapu: *U.S. Expl. Exped.*

Lifuka: in seaside thicket toward northern end of island, Apr. 25, 1953, *Yuncker* 15724.

Kao: in thicket, margin of abandoned plantation, May 6, 1953, *Yuncker* 15951.

Vava'u: *Crosby*; in thicket near sea below Houma village, May 22, 1953, *Yuncker* 16125.

Niuafo'ou: in thicket in an interlaval "island" on way to upper rim of main central crater, May 16, 1953, *Yuncker* 16002.

Niuaotupapu: on edge of mountain range above Vaipoa, Dec. 5, 1951, *Hürlimann* 353.

Frequent in thickets throughout Tonga. A tropical Asiatic species now pantropic in distribution.

Tongan names: *matamoho*, *moho*.

The seeds are used for necklaces and other ornamentation.

1 / *Inocarpus edulis* -- Analyst/

6 Bernice P. Bishop Museum—Occasional Papers IX, 9

226 Fish nets (*finaki*). A fish net is made from the leaves of the
[286] coconut palm. The roots are plaited into a round net very much like
a lobster net; when ready it is sunk in the sea, weighed down by a
stone or some heavy weight. The fish swim into an opening in the net.

USES OF THE COCONUT PALM

824 The coconut tree is considered by the natives to be the most useful
tree in Tonga. It is indispensable in house building, and the number
[487] of articles made from its wood and leaves is remarkable. The heart
[278] of the tree is used for making walking sticks, the bark for medicine,
[226] the roots for a kind of fish net called *finaki*, the leaves for baskets,
[289] thatching houses, and making mats and flooring. The uses of the
[312] fruit are innumerable.
[357]

824 As a medicine the fruit is given to pregnant women to increase
the supply of breast milk. For this the green nuts are used. A new-
born child is always given *namoa*, which is made from the roasted
[853] flesh of the ripe nut. This roasted flesh is chewed by someone,
[843] usually a woman, and when taken from the mouth is rolled in a piece
of *fetaaki*, squeezed, and the juice given to the child. This is his
only food for four days.

824 Ripe coconuts are valuable for copra, which is the dried flesh.
[437] This is sold to European markets largely, where it is used for soap,
[314] candles, oils, and a variety of products. The shells of the coconut are
[415] burned and made into charcoal (*malala*) for ironing. Kava cups also
are made from the shells.

824 No native food is considered complete without the presence of
coconut in one form or another. Yams, fish, and bananas are usually
[262] cooked in the milk extracted from the flesh of the ripe coconut and
[252] strained through coconut fiber.

824 Brooms are made from the ribs of the leaf, and the leaf stem is
[412] used for stirring oil, also as weights for tapa which is spread on the
[287] ground for printing. The bark (*kaka*), which surrounds the leaves
[415] at the body of the palm, is used to make bags for wrapping arrow-
root and medicines.

The several varieties of coconut palms have different uses.

VARIETIES OF COCONUT PALMS

245 KAPA. The nut is gathered when green and husked, the husk put in a native
oven and left for two weeks, after which it is taken out and beaten to re-
move all the dust. The fiber thus obtained is plaited into mats.
824
[285]

8 Bernice P. Bishop Museum—Occasional Papers IX, 9

857 were throwing a stone. The end of the *fau* bark held in the hand is
524 released and the arrow shoots off to a great distance.

A bow and arrow game, *gahan*, is played with a very slender, supple *kaho* stick. The bow is made from a stout orange stick.

For the boys' game of *maka ta*, an implement very much like the modern slingshot is used. The bark of *tapa* or *fau* is used for the sling and a small pebble for ammunition. The sling is swung around the head full force, and the pebble thereby released and shot out into the air.

535 A Tongan dance (*lakalaka*) may be performed by any number of people of both sexes. The leader (*bunake*), composes the dance, [565] teaches it, and leads the dancers. He chooses leaders (*vahegas*) for both the men's and women's parts, who must be of chiefly rank, as no one considers the *lakalaka* worth watching unless the *vahega* belongs to the family of a chief. The words and music (*hiva usu*) for the *lakalaka* have been handed down from early times.

The *fahaiula* is a dance participated in by women only. The dancing is done to the sound of drums, with groups of girls sitting around singing and clapping hands to keep time for the dancers.

857 A game for small children (*aaimoa*) is played by ten or more
524 little girls and an old woman. The old woman covers herself with a piece of *gatu* or *tapa* cloth and tries to frighten the children, who run to escape her.

The game *fisi* is for both sexes. A rolled mat (*tapakau*) is placed on end with a stick on either side to support it; the children have small dried pieces of dried *fau* wood which they try to send over the top of the mat with one sharp clip of the finger.

CLOTHING OF WOMEN

291 The material used in most of the clothing worn by Tongan women
287 in the early days was made from *feta'aki* (white *tapa* cloth before
[294] it had been dyed or printed). The leaves of certain trees were also
[288] used, coconut fiber serving as thread for sewing them together.

292 Funeral garments were made from leaves blackened by several
764 days' exposure to the sun. These leaves were sewed together with
[292] a needle made from the small rib of the coconut leaf, the bark of the
[288] *fau* tree serving as thread.

287 A more modern method of dyeing the *tapa* cloth for funerals
386 is as follows: The natives gather a great pile of candle nuts (*tutui*),

476 most cases, these tasks are performed in the spirit of community service with the beneficiary of the work generally supplying food and drink to the workers.

Technology

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Tongan agricultural technology relies primarily on human labor with no plow animals and only limited mechanization. The average Tongan gardener still uses simple hand tools that replaced the traditional digging stick over a century ago. As early as the 1850's, it was mentioned that in the preparation of soil for yams "the earth is completely dug out of these pits, by aid of small iron huos or narrow lance-shaped spades, attached to a long wooden handle..." (West, 1865:136). The major tools that are used by Tongans today include: cane knives or machetes (hele pelu), owned by 99 percent of 141 sample households; sharpened digging spades with heavy wooden or pipe handles (huo keli), owned by 88 percent of all sample households; flattened spades with broad hoe-like heads (huo lafalafa) used for weeding and clearing grass, owned by over 94 percent of the sample households; axes (toki palangi), owned by 74 percent of the sample households; steel digging forks (huo langa), owned by 61 percent of the sample households; small coconut knives (hele hihi niu), used to pry coconut kernel from the shell, owned by 43 percent of the sample households; garden rakes (leiki) owned by 15 percent of the sample households; and

241

412

241 metal adzes (toki Tonga), owned by only 2 percent of the
● 412 sample households. In the cases of machetes, hele pelu,
and the two most important spades, the huo keli and the huo
[369] lafalafa, many households owned more than one of each. Rakes
[247] and shovels are commonest in the urban area of Nuku'alofa
where ornamental gardens are more prevalent.

241 Using only these implements, most Tongan farmers cut
down the bush or forest vegetation and after burning the
accumulated plant material after drying, prepare the land
for planting, plant, weed, and harvest the different crops.

241 An increasing number of farmers, however, are beginning to
407 use the tractor-pulled plow and disc-harrow and, although
654 only one out of 141 households owned a tractor, 53 percent
have had their allotments plowed at one time or another,
mostly by the Coconut Replanting Scheme or the Agriculture
Department for planting new coconuts or other export crops.

241 of the 140 households interviewed, 43 percent felt that
plowing was good for the soil, 44 percent felt that it was
bad and caused the soil to become infertile, 13 percent had
no opinion. Regardless of the feeling of the average Tongan
241 the Agriculture Department, the Coconut Replanting Scheme,
654 and the Produce Board have been advocating the use of the
plow rather than burning the dried vegetable matter.

[492] Although the Agriculture Department has experimented with
draught animals for plowing, Tongans have never adopted
this practice (Government of Tonga, 1952:3).

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[242] of food, medicines, firewood, fodder, fish poisons, and other valuable products (Table E).^A Some such as Cyperus rotundus, Commelina spp., and Psidium guajava constitute noxious weeds which have become a current focus of government control programs.

A number of allotments also had uncultivable areas under "natural" vegetation. These allotments were usually found on the coast and included areas of littoral forest on the low-lying leeward northern coast. Although of limited agricultural potential, they are sources of many useful products and constitute gene pools of many species rapidly disappearing from most bush allotments.

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178 With respect to agricultural practices and improvements on bush allotments, the technology used by Tongan farmers seems to have changed only slightly in the past hundred years. With the exception of the increased cultivation of manioc, American taro, sweet potatoes, and recently introduced banana clones, traditional crops and tree species are still the dominant features of the agricultural landscape. Cultivation techniques have also changed very little from what was described in the mid-seventeenth century (West, 1865:139-139; Maude, 1965:162).

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[412] Bush fallow is still the primary means of restoring soil structure and fertility; the most widely used tools are machetes and steel bladed hoes, and fire for clearing the [242] vegetation. There is some deliberate planting of Dolichos

^A[See Category 137, pp. 377-431--Analyst.]

92: Kaeppler E-4 (1964-1967) 1971
OU9 Tonga OU9

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PLATE 4a.



(i)



(ii)

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PLATE 4b.

[End Plate 4]

[Captions appear on page facing End Plate 1--Analyst]

EIGHTEENTH CENTURY TONGA

215

and a companion in the same museum are the only examples of fly whisks made in this manner. The handles are completely incised in zigzag patterns and inset with ivory pieces in the form of men, birds, stars, and crescents (Moschner 1955: 222, 224). The carving and ivory inlay are done in the same manner as the incising of Tongan clubs, but handles of Tongan fly whisks are usually uncarved. Since fly whisks are only used by chiefs in Tonga, one would suspect that such an elaborate one would have been the possession of a special chief. The existence of the information in the Leverian sale catalogue—that it belonged to Paulaho—was the corroborating evidence we needed.

A specimen in the Pitt Rivers Museum illustrates the usual early type of fly whisk (plate 4a). It is made with a slightly tapered, polished wood handle and a whisk of coconut fibre, bound by a wrapping of twisted 'olonga fibre. It is 53 cm. in length and a small section of the whisk is braided. An almost identical piece exists in the Forster collection in Göttingen, and there are two similar ones in the British Museum. The Pitt Rivers example is a good type specimen. It is the usual Tongan type in early collections, its provenance is given as Tonga in Forster's list, such whisks still exist in Tonga, and an engraving in Labillardière (1802: plate 33) is virtually identical. Another whisk of this type, but with a bone handle, exists in Bern in the Webber collection from the third voyage, but its provenance is given as Tahiti. It is certainly Tongan, and can now be separated from the Tahitian materials.

The fly whisk, *fue kafa*, was an important symbol of rank in Tonga. It was manipulated in a specific manner, called *fuefue*, which took practice and deftness of hand. A Tongan proverb puts it nicely: 'Who is this fellow who wields his *fue* like a commoner?' This proverb is used today for anyone who is presumptuous beyond his status. The *fue* is a good example of the reflection of social stratification in material culture. The Tu'i Tonga was chief of the chiefs. The *fue*, a visual status symbol that could be used by all chiefs, was differentiated when used by the Tu'i Tonga in a manner befitting his high rank.

Incising of the designs in wood was done by means of a shark-tooth implement represented in the Pitt Rivers Museum by Forster specimen Number 174, 'shark's tooth set in wood, from the Friendly Isles' (plate 4b, (i)). Before Forster's Catalogue was found in 1969, this specimen was noted 'Tahiti.' This provenance may have been derived from comparing it with a similar specimen in the British Museum that is in the TAH series, but one must remember that the TAH series reflects the views of a nineteenth century cataloguer and that, for the most part, the Tongan items were not separated from the Tahitian. Also in reference to this erroneous British Museum provenance, Duff in his recent catalogue ascribed a similar tool in the Canterbury Museum, New Zealand, to Tahiti (Duff 1969: 26). But I think there can be little doubt that this tool type is Tongan.

We are indebted on this account to Forster for two reasons. Not only does he state clearly that this tool is from Tonga but he also gave its companion tool (plate 4b (ii)), a nail set in a handle of bone. This specimen (Forster 101a) he lists as 'An old nail, brought to the friendly Isles by Tasman in 1643 and preserved by the Natives, & used as a gouge or borer'. Thus, though one might question his attribution of the shark-tooth tool to Tonga, one could hardly question the nail attribution. And this is crucial, for the hafting is virtually identical. Reinold Forster describes this piece, or a similar one, in his *Observations*: '... when we landed at Tonga-tabu

A. [See End Plate 4, following p. 220--Analyst]
A.

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[177]

[439]

ADRIENNE L. KAEPLER

216

412 one of the natives sold a very small nail carefully fastened in a handle of hard wood,
175 and tied to it by strings of coconut-core. This nail was undoubtedly left by Tasman,
[439] who was there in 1643, and consequently had been preserved 130 years, and is now
[127] lodged amongst other curiosities in the British Museum' (1778: 368). Perhaps there
412 is such an implement in the British Museum with a nail lodged in hard wood;
127 however, they have no record of it. The Pitt Rivers specimen has a handle of
[554] bone—a perceived Tongan alternative which probably indicated that its use was
restricted to the higher ranks as we have also seen in the bone and wood handles of
fly whisks (i.e., Bern and Pitt Rivers specimens). It is certainly possible that there
were at least two such hafted nail implements, for Cook discovers on his third
voyage, that,

[175] on my enquireing of Fattafee the King how they came by the Knowledge of iron and a small
[177] iron tool I saw here last Voyage, he told me it came from Onnuahatubutu [Niuatoputapu],
[439] and on asking him how the people of that island came by it, he said one of them sold a Club
for five Nails to a Ship which came to the island [Wallis in 1767], and that these five Nails
after wards came to Tongatabu and were the first they had seen, so that the Iron they got
from Captain Tasman must have been worn out and forgot long ago (Beaglehole 1967: 162).

Two implements almost identical to the Forster shark-tooth example exist in
Dublin and another in Vienna. The Vienna specimen was noted in the first inventory
[284] of the collection as an engraving instrument from Tonga (Moschner 1955: 139),
and has a bark cloth padding under the sennit binding—a very Tongan way of
hafting, also used for the hafting of adzes. Finally, yet another specimen is en-
412 graved in Labillardière (1802: plate 32) with a very good accompanying des-
322 cription:

we saw several [Tongans] who were employed in carving others [clubs] with shark's teeth
fixed into the extremity of a piece of wood. We were astonished to see them quickly notch,
with this sort of chisel, *casuarina* wood, notwithstanding its extreme hardness. Others already
used with much dexterity some of the iron instruments which we had given them (1802:
147-8).

In this case there is no possibility of confusion with Tahiti, for Labillardière did not
go to Tahiti.

714 One specimen in the Pitt Rivers Museum (plate 5a)^A appeared at first to be not
127 Tongan at all and its use was even more mysterious—a large thin plate of whale-
237 bone with the edges curved and having three holes at one edge and labelled Number
62. Before the original Forster catalogue was found, it was labelled New Zealand.
The *Catalogue*, however, lists Number 62 as 'a Shield made of Bone, probably
of a cetaceous animal', and is designated as Tongan. In George Forster's account
[175] of the voyage we find the description and collection information: 'we bought a
[439] large flat shield or breast-plate, of a roundish bone, white and polished like ivory,
about eighteen inches in diameter, which appeared to have belonged to an animal
of the cetaceous tribe' (1777: 455). The Pitt Rivers specimen measures 18 inches
and an almost indential specimen exists in the Forster collection in Göttingen.
There is also a larger and thinner one in the British Museum (no accession informa-
tion or provenance). How or when these specimens were used, we are unfortunately
not told. One could suggest, however, that this is a large and ostentatious rendering
of a shell breast ornament in whale bone, which was a material of high status. The

^A. [See End Plate 5, following p. 220 -- Analyst]

534 longer exists in Tonga and no specimens have been located in museum collections.
[175] Were it not for the Cook descriptions, one might be tempted to explain any reference to them as the result of contact with Fiji, where they still exist.

535 A dance paddle was collected by Forster, but there are no descriptions of Tongan
412 dance in the second voyage accounts. The paddle is listed in the Tongan section
252 of the *Catalogue* as Number 81, 'a Spatule of wood to mix up their paste of bread-fruit paste', but this need not be as incorrect as it sounds. Tongans did make bread-fruit paste and several breadfruit pounders were collected. If a utensil was necessary at a moment's notice it is not unlikely that a discarded dance paddle would be used. The Pitt Rivers Museum example had been broken and mended with coconut fibre and its shape would be a good one for mixing breadfruit paste. The dance in which the paddle is used (*me'etu'upaki*) was depicted and described in the third voyage accounts. A watercolour by Webber is now in the National Maritime Museum, Greenwich,¹⁰ and in Cook's Journal there is a detailed description (Beaglehole 1967: 109). During Cook's time this was the type of formal dance performed on state occasions and in connection with the Tu'i Tonga's harvest ceremonies. Today this dance can only be performed by members of the village of the Tu'i Tonga. This recognises the still exalted status of the Tu'i Tonga line and those who descend from it, even though it is not the ruling line of today.¹¹

535 The second dance type described and depicted in Cook's third voyage accounts,
175 the *me'elaufola*, was during Cook's time the informal dance type. An engraving (plate 6a) shows how observant Webber was and how he has made an artistic convention useful to research. The women on either side of the musicians are shown with their arms in quite different positions. With a knowledge of Tongan dance one can easily discern that Webber has depicted the beginning and end of the most important arm movement in Tongan dance.¹² This convention was also used by Labillardière in his depiction of another Tongan dance (1802: following p. 167).

535 The *me'elaufola* no longer exists in Tonga, but it has evolved into the new formal
178 dance type of today, the *lakalaka*, which uses the same arm movement as that drawn by Webber. The *lakalaka* visually and poetically acknowledges the shift in societal power to the Ha'a Ngata. It is performed by all the adult members of a village, who, in effect, deliver a speech in unison dramatising their words with actions and thereby pay their allegiance to the established socio-political order of Tonga. The contemporary arrangement of dancers reflects such traditional Tongan values as sister outranking brother, resulting in brother-sister avoidance, while the placement of chiefs and *matapule* lines represented in the village, as well as the achieved status of best dancer (*malie taha*), demonstrates how concepts of rank pervade all Tongan life in a manner as important today as it was in the eighteenth century.

121 We conclude, then, that written accounts, illustrations, and collections made
175 on the voyages of Captain Cook have contributed new insights into the material
127 culture and society of Tonga. Many ethnological collections have been almost totally ignored by social and cultural anthropologists for many years and the associated documentation has often been mislaid, and in some cases destroyed. It is occasionally possible, however, to identify and localise early specimens from illustrations and from the records of eighteenth-century museums and private collections, and this documentation has been crucial here in increasing our understanding of Tongan material culture. Further, the study of first hand accounts of

A, [See End Plate 6, following p. 220--Analyst]

600

THE GEOLOGY OF THE TONGA ISLANDS.

[Eua Island]

133 Among the volcanic fragments Mr. Harker has detected red garnet
(135) and tourmaline, whose presence indicates the existence of meta-
morphous rocks somewhere in the vicinity.

A similar partly calcareous rock occurs at the northern end of terrace b, where the volcanic basis is exposed*.

(134) The uppermost part of the volcanic formation consists of red, yellow, and brown beds of ashes, which are very much decomposed by weathering. Some are nearly horizontal, others a good deal contorted, but they are never, so far as I observed, regularly inclined at an angle, as though they had formed part of a volcanic cone.

As mentioned above, dykes of intrusive rock project on the eastern shore. They are composed of augite- and hypersthene-andesites. Large rounded boulders of this rock, mixed with boulders of coral, form the shore, and the natives obtain here the hard rounded stones which are used for pounding the root of the kava plant, in the preparation of the beverage of that name. The dykes penetrate the beds of tuff and form well-marked projections at the surface; they do not, however, penetrate the overlying limestone.

• (412)
(276) Besides the intrusive rocks there is a crystalline, plutonic rock in this part of the island, of which I obtained a specimen from a boulder on the shore. Mr. Harker describes it as "uralitized gabbro." Although I did not find this rock *in situ*, I have no doubt that it exists as a natural constituent of the island. It is highly improbable that a boulder should be brought here by artificial means, for there is no possible landing-place for vessels along the whole of this eastern coast, and the only access to it from the anchorage on the western side is by steep hill-paths. A reef about 100 yards wide stretches out from the shore, and on the edge of this reef a vessel would strike, supposing one to be wrecked. I think therefore it may be concluded that the rock occurs naturally on the island.

The volcanic basis of Eua appears to have been produced by an extensive submarine eruption which formed a mound of considerable extent, and into which lava was injected.

The eruption seems to have occurred at some depth, for the organisms found mingled with the volcanic materials are, according to Dr. Murray, pelagic and not shallow-water forms. Subsequent to its formation and the cessation of the volcanic forces, but prior to the deposition of the overlying limestones, the mound was elevated to at least its present height and considerably denuded. The evidence for this denudation is afforded by the elongated shape, and the steepness of the eastern slope of the volcanic basis which underlies the limestone; these imply the removal of a considerable part of the original mound, which is built up in the main of horizontal layers. After its denudation the island subsided again, before the deposition of the limestone formation.

The limestones invest nearly the whole of the lower part of Eua up to a level of about 500 feet, and above this level they occur, though less continuously, as high as the summit.

* Slide No. 1273.

/44 cont./

515 equipment. In times of drought (often October to December) the
 132 supply of rain water is sometimes so scarce that people temporarily forego the daily thorough bathing.

515 /45/ Although in the schools, in the subject of hygiene, there
 302 is general instruction in tooth brushing, and European toothbrushes are easily obtainable, only very few Tongans have so far used them. However, fingernails and toenails are cut quite short so that there is almost no rim and the nail surface is often circular. Nails are mostly cut with the large bush knife. Ancient Tongan cutting tools (shells, bamboo) are no longer used. For shaving, the two shells, the pumice and the shark's tooth (100)

100. Cf. J. Cook, Beschreibung.../Description/
 loc. cit. VI. p. 181; J.J. Labillardiere,
Relation du voyage a la recherche de La Perouse
 /Account of the voyage in search of La Perouse/
 vol. II. Paris 1800. p/120; E.A.W. von
 Zimmermann, Australien /Australia/. loc. cit.
 vol. I, part 2. p. 640; J. Martin, An account...
 /cited in English/. loc. cit. II. p. 282.

have long since been replaced by razor blades which can be bought on most of the islands. However, not all Tongans own a safety razor. Many shave simply with the blade held in their hand, which is more a scraping than a cutting, and is reminiscent of the pumice stone. Even in the smallest village a great many natives are generally neatly shaved, some have a stubble varying in length (101)

101. On Sundays, however, even the latter are almost always smoothly shaved.

302 and a few wear more or less well cared-for full beards. This state
 565 of affairs seems in general to resemble the pre-European era, though the commoners in olden times probably groomed themselves less carefully than the nobles. (102)

102. Cf. W. Ellis, An authentic narrative...
 /cited in English/. loc. cit. I p. 92; if the

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 177
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302 /47 cont./
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can no longer be observed.

302 Just as some younger Tongan males have copied certain fashionable
177 haircuts from whites (trimmed short all around, sideburns, etc.),
the variety of hair styles of Tongan women must also be regarded as
copies of European models which the women come across in magazines and
newspapers on the small islands and see in the movies and on some
white women on Tongatapu and Vava'u. As a result of the "liberation"
(565) of the commoners, long hair /48/ is not any more the prerogative
of the daughters of chiefs, (113)

113. Cf. E.W. Gifford, Tongan Society /cited
in English/. loc. cit. p. 129.

and short hair is no longer seen. (114)

114. G. Forster, loc. cit. IV. p. 325; J.
Dumont d'Urville, Voyage pittoresque...
/Picturesque voyage/. loc. cit. II.
p. 79.

302 Tongan women wear a knot at the back of the head, topknots, braids
(two to four), braided knots, rolls or semi-long hair (a mop of
curly hair). The younger women "try out" all kinds of hair styles
and enjoy changing them (for instance, in the course of a conversation
they will tie up their loosely hanging hair into a top knot), whereas
older women prefer the plain knot at the back of the head. Today
(177) most people comb their hair with a European colored plastic comb
which they sometimes also fasten into their hair as an ornament. The
● (42) old combs artistically fashioned of small rods and coconut fibers
have not been made for a long time, and even the carved wooden
combs that were made until recently on the Niuas, have been almost
entirely replaced by the cheap and colorful synthetic products. The
(177) coiffures are mostly knotted and held in place by themselves;
occasionally, European hairpins are also used. No Tongan woman now-
adays uses coral lime for her hair; almost all of them prefer the

/100 cont./

276 is filled, which the recipient must now empty in one draught. The work can be carried out by the girl alone. However, one or two young men may assist her in pounding the kava root and adding the water.

276 This procedure resembles the one customary in ancient Tonga. In those days, however, the Kava roots were chewed; (275)

178 275. See J. Martin, loc. cit. II. pp. 189/190.

797 the missionaries influenced the natives to perform this work with stone
177 slabs and stone pestles (from the volcanic islands of the Archipelago).
412 (276)

276. See H.N. Moseley, Notes by a naturalist...
/cited in English/ p. 287.

276 The old water vessels (hollow coconuts, calabashes, wooden bowls) were
178 also replaced by European buckets. It is interesting that the Tongans
415 never drink kava out of a European cup (even though porcelain cups or tin mugs are found in every house), but only out of coconut cups (277)

(178) 277. The banana-leaf cups observed by Mariner (J. Martin, loc. cit. II. p. 197) are no longer made, probably because it is too inconvenient to bring the banana leaves from distant plantations to the village.

which, with the wooden bowl, the mat and the bast bundle form a natural unit. The bucket which is a somewhat jarring note does not bother anyone, even though the natives have a certain feeling for bad taste (for example, a Tongan would never wear a ta'o-vals with trousers). (278)

278. See page 69-71.

276 The kava group (that is, the men gathered together to drink and
574 socialize) (279)

(562) 279. Women do not as a rule drink kava; they often sit in another part of the house and listen to the conversation of the men.

/135 cont./

342 (tufuanga langa fale). They (with several helpers) erected the chiefs'
463 dwellings and other larger buildings. (363)

363. See J. Martin, loc. cit. II. pp. 96. 279.

342 It is to be assumed that commoners mostly built their houses themselves,
565 especially since Mariner reports that everyone knew how to build a house. (364)

364. Ibid. p. 279.

342 The tools used in house building consisted chiefly of various axes with
412 stone blades and rasps with rough fish skins. (365)
[237]

365. See W. Ellis, An authentic narrative
/cited in English/. I. p. 109; J. T.
Plant, Handbuch.../Handbook/ II. p. 374.

342 Today almost every Tongan is still capable of building by himself
198 a dwelling with the ancient Tongan ground plan, and there are also a
199 few "laymen" who can erect a European-type house. Besides, there are,
463 as in old times, special house builders living in every village. They
received their training in the traditional way: by working on various
[868] house-building projects they gathered knowledge and experience. A few
342 were trained, European-fashion, as carpenters (for example, in Fiji).
198 Therefore, as a rule, they own an assortment of good English tools (for
199 example, axes, hatchets, adzes, saws, hammers, drills, planes, chisels,
463 caulking irons, screwdrivers, files, clamps, angle irons, levels, tape
412 measures, etc.). Among the rest of the house builders, European axes,
335 transverse hatchets with iron blades and large European machetes, as
all-around tools, replace the equipment customary in ancient Tonga,
which has long since disappeared throughout the Archipelago.

412 /136/ The big axe (toki lahi) is used to cut down trees and cut
up and split trunks. It is usually bought readymade in the commercial
[824] centers of the Archipelago; sometimes the natives acquire only the blade
(approximately 19 centimeters length and 11.5 centimeters maximum width)

/136 cont./

412 and make the handle themselves (length 85-90 centimeters) out of wood
[824] of the toa tree (Casuarina equisetifolia L.).

There are various transverse hatchets; the iron blades are bought and then hand-shafted as desired. To make a fale-vatu lahi the natives like to take an ordinary European hatchet blade of the type [177] [439] [824] which was formerly traded in Tonga by German commercial firms, and provide it with a forked-branch shaft of the feta'u tree (Calophyllum inophyllum). The blade which lies crosswise is fastened (lashed) with [284] [283] coconut-fiber cords (kafa) that are drawn through the eye (provided for the handle by the European factory). The blades necessary for such [439] transverse hatchets can at present no longer be bought from merchants in the Archipelago; the ones in use, which some of their present owners have inherited from their grandfathers, are therefore

[284]



Transverse hatchet (fale-vatu)
with European blade (Expedition Collection, No. 102)

of special value and handled with great care. Sometimes the rear abutment on the shaft, which has to absorb the blow, is protected against splintering by having some six nails driven in. In a typical specimen of the fale-vatu lahi, the measured length of the blade was 18 centimeters and the maximum width 15 centimeters, the length of the handle [342] [335] was 47 centimeters. In house-building, longitudinal grooves are cut

/136 cont./

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322
into the coconut-palm pieces of trunk with the fale-vatu lahi in order to make the rafters (kahoki) (see below). This transverse hatchet-- with the same shape and shaft--also occurs in a smaller version known as fale-vatu si'i, and is used preferably to "plane" the rafters (chip off unevenness). The toki taha-taha and the toki tele are used for the same purpose. The smaller hatchets (handle length about 30 centimeters) have European planing blades, again mounted crosswise, with the cutting edge fastened to a forked branch with a kafa lashing. Here too the handle usually consists of feta'u wood. In the case of the toki tele are used for the same purpose. The smaller hatchets (handle length about 30 centimeters) have European planing blades, again mounted crosswise, with the cutting edge fastened to a forked branch with a kafa lashing. Here too the handle usually consists of feta'u wood. In the case of the toki tele, parts of a coconut husk are used as a blade cover. Another small transverse hatchet (handle length 25 centimeters), the toki unga ko, may be mentioned. Here a European gouge approximately 20 centimeters long with its curvature resting on an insert of toa wood is attached with a kafa lashing to a feta'u forked branch. Owing to the insert, this blade can be turned and thus makes possible various semicircular cuts.

The transverse hatchets mentioned here are often also bound with wire (or hemp) instead of the coconut-fiber cords.

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177
These transverse hatchets are an interesting fusion of ancient Tongan and European tools: the natives have generally replaced their stone blades /137/ with the various more efficient metal blades, but have retained the old Tongan type of shaft so that they can use the new tool for their traditional working methods (see below). (366)

366. The transverse hatchets are used not only in house-building, but also in woodwork generally (for example, boat-building, see P. 351-353).

/137 cont./

412 The large machete (hele pelu) is generally bought readymade
 (439) (total length 60-70 centimeters), and is easily obtainable in the
 commercial centers of the Archipelago. The knife tip which is bent
 slightly upwards is usually cut off. The frequently broken handles are
 (824) skilfully replaced by self-made wooden shells (feta'u wood). This
 machete is an all-purpose instrument. In house-building it serves for
 the most diverse tasks wherever something needs to be cut, knocked off,
 or leveled (planed), and for many Tonga it replaces the small trans-
 verse hatchet. Beyond that, the knife has a wide range of uses in
 the hands of men, women and children, from cutting finger- and toe-
 nails to various tasks on the plantations.

342 Many Tongans (especially commoners) feel it is important to erect
 463 what they regard as a well-built, solid dwelling on their property, and
 331 secure the help of a specialist who carries out the work with several
 helpers (relatives of the "owner," his friends and other villagers).
 If, later, a second house is needed on his place, he usually builds it
 himself (alone or with the help of members of the family and other
 relatives or friends).

In 'Uiha/'Uiha (Ha'apai), in 1952, 76 dwellings with ancient Tonga
 ground plan were carefully examined.

342 Of these, 54 were built by house builders (or Tongans who were
 463 regarded as house builders). Until recent times their work was acknowl-
 465 edged only with food. In only seven cases was the builder paid with money
 331 (sums between 8 and 40 \$ T.); four of these cases involve an impover-
 ished refugee from Niu Fo'ou who, in 1951, worked only as house builder
 in 'Uiha, hence these cases should be regarded as exceptions. In two
 cases that took place 50 years ago, the builder was remunerated with
 mats and tapa, while in a case that occurred 30 years ago a rather
 large quantity of coconut-fiber cord (kafa) was given.

342 The remaining 22 houses were built by natives who are not special-
 463
 331

331 /141 cont./

342 owners. The palms chopped down with the big axe (toki lahi) (see
476 above) are cut up with the same axe into nine-foot (or eleven-foot)
(313) lengths and, for further preparation, are placed on two smaller
342 (properly notched) logs. The "jacked-up" logs are then provided with
476 longitudinal grooves by two Tongans standing opposite each other
335 who, with the big transverse hatchet (fale-vatu lahi) (see above),
412 strike blow after blow, each /worker/ forming a longitudinal groove;

331 /142/ the two longitudinal grooves meet as they are struck, so that the
second of the two workers can, with his blows, simultaneously tear
the bark and wood out of the resulting fissure and thus lay it open.
After turning the log slightly on its supports, another Tongan,
/applying/ blow after blow with the big axe, slits the resulting work-
piece (the rafter-to-be) on one side. After a further turning, the
two men start cutting another lengthwise groove with the transverse
hatchet. The process is repeated successively until 10, 12 or 15 rafters
(kahoki), depending on the circumference of the trunk, are marked off
all around the log. Then the kahoki (which already have a preliminary
slit on one side) are separated from the log with the big axe and a
pointed club (crowbar). With a machete the rough chips are removed
and the rafters are loaded on two-wheel, horse-drawn carts and taken
to the building site in the village.

331 There are no reports about how rafters were made in ancient Tonga.
342 However, it is to be assumed that today's work which seems so primi-
335 tive to us was carried out in the same way in those days, and that
178 there is a change only with respect to the axes, the iron blades of
177 the transverse hatchets and the measurements with English foot rules.

342 The groups of natives, each working on the felled coconut palms
335 (young and old separately, but also individual older men among the
476 young ones), busily engaged, though soon stopping for rather long
46
331

/143 cont./

342 served, and at 15 o'clock everyone gets his basket with his share of
 272 the earth-oven meal: manioc, kape, sweet potatoes and salted
 264 beef, along with a coconut mug of beef broth. In the afternoon, while
 342 a few natives continue splitting and planing rafters, others, with
 331 the huo lafa-lafa (shovel iron), (374)

374. See p. 233-234.

[276] level the ground measured off by the carpenter for the house. Under a
 [571] temporary corrugated metal roof a kava group of ten older men is
 [264] gathered. At 18:45 fried cakes and orange-leaf tea are again handed
 out. Then the men slowly go home; a few natives take along a
 basket of leftovers from the afternoon meal.

[332] On the third day of work, more rafters and curved sections of
 [412] beams are made; the ground plan of the house (in ancient Tongan style)
 [177] is marked out, and an approximately 15 centimeter excavation is dug
 (tools: two huo spade [a small iron blade set on an old digging stick;
 [276] see page 234] and a European shovel). Four older Tongans form a kava
 [571] circle. The meals are the same as on the previous days. The work
 [796] stops toward 16 o'clock, for at 17 o'clock the usual church service
 (Friday) is held.

[335] On the subsequent work days the posts and beams (native and
 Canadian wood) are cut and planed with the carpenter's tools
 (transverse hatchet, saws, planes, adzes); the work on the rafters
 (total number 250) also continues. The meals corresponds to those
 [276] of the preceding days. The kava gathering of older men continues to
 [571] assemble on the building site.

342 Finally, the four customary posts that are to carry the roof are
 331 set in place. However, the carpenter intends to give the house more
 335 room and to replace the "disturbing" posts with special supports of
 Canadian building timber, leading upward obliquely from the side walls;

/144 cont./

342
331 with wooden tenons. Two of these round beams form the framework of
335 one narrow side of the roof; as in old times, they are set on the ends
177 of the main horizontal beams (375)
(284)

375. That is, the horizontal beams resting
on the four posts.

(412) and fastened to them with coconut-fiber lashing. Rafters and roof
laths are tied over them and nailed, and here, too, strips and
corrugated sheet metal--laboriously cut with sheet-iron shears--are
nailed on.

It is only now, when the roof is finished, that the men apply
themselves to the walls which are built in a quite "modern" form.
(333) They pour a cement foundation all around the house (according to the
ground plan) in which screws are inserted. To these they screw beams
which form the basis for a wall framework to be built between the
foundation and the edge of the roof. On this framework they nail the
wall boards, allowing for window- and door- openings. Then they take
out the four posts which are so important for the ancient Tongan house
(which here were set up only temporarily) and replace them with
supports extending obliquely from the base of the walls to the joints.
The roof now rests partly on the walls--a very considerable change for
Tonga.

342
331 The rest of the work is slowly carried out, for the general
enthusiasm has abated, especially since the rations have become scarcer
(after the boss's last beef has been consumed). Because Christmas
preparations are now beginning in the village, only a few willing
workers appear at the building site. They cover the floor of the
house with sand, paint the outside of the new building with light
blue oil paint, attach a gutter and start to make the doors, until
the building material gives out and the work stops. However, the

/147 cont./

352 personal wealth, and it often gives him the comforting assurance that
177 he will always be able to receive a white guest properly.
(556)
(574)

415 Among the rest of the household effects, the wooden, multi-
178 footed kava bowl along with the coconut mugs have a prominent place
in most houses, as in the old days (391).

391. On the custom of the kava drink see
pp. 143-149.

422 Almost every household also owns a roll of tapa from which pieces are
412 cut off as needed. For sweeping, the natives still use a broom (tau
824 fale) made of the ribs of pinnate coconut leaves, coconut-fiber cord
and a stick of hibiscus wood. The old Tongan lamps, /148/ in which
354 coconut oil was burned, like the more frequently used torches, have,
178 however, long since disappeared. In every house one sees European
177 kerosene lamps, and the modern benzol pressure lamps are also rather
widely used. In the villages, matches have altogether replaced the
372 old method of rubbing fire; it is only on the plantations that fire is
177 often produced in the old way, (392)
178

392. On the long side of a trunk of Hibiscus
tiliaceus (tolonga) approximately 80 - 100
centimeters long, which has been flattened
with a knife, a pointed rod (kaunatu)
of the same wood is rubbed back and forth
with both hands, under steady pressure and
with mounting speed so that the sawdust
that gathers at the bottom of the trough
gradually grows hotter and finally starts
to smolder; tinder (for example, a dry
coconut husk) can thus be ignited. The
process usually takes 20 - 25 seconds; 15
seconds were said to be "record time."

415 with which very many Tonga are still familiar. No Tongan uses
177 bottle gourds any more for storing liquids. Glass bottles of various
178 shapes and colors are taken for granted in all Tongan dwellings.

000 Almost all Tongan households also have smaller or larger mirrors, and

/155 cont./

241 for the accidental green manure from decayed parasites on banana trunks
and the ashes from burning the slashed and dried wild plants when the
land is cleared. The apparently recent but /156/ obvious exhaustion
241 of the soil on several Ha'apai islands, (412)
242
134

412. It is impossible for many land-poor
Tongans always to observe the necessary
period of fallow.

leads to the fact that here the less exacting, "new" manioc plant is
in places planted more abundantly than the demanding yam; on Nomuka,
for example, yam cultivation ceased altogether for a time until it was
discovered in 1943 that the plant flourished once again. It was on
this particular island that the Forsters (413)

413. G. Forster, loc. cit. V. p. 150.

saw an abundance of harvested yams.

242 The planting together of various crops on the same land (for
example, yams with bananas, sweet potatoes with kape and bananas)
is a procedure already practiced in ancient Tonga, (414)

414. See, for example, J. Cook, Beschreibung...
loc. cit. VI. p. 284.

and is apparently based on early experiences of biological suitability.

241 The planting of coconut palms has, however, as a result of copra
245 production by the natives, become greater than in the past; the govern-
178 ment prescribed division of the api'uta into half for coconut palms and
656 half for crops has on some islands shifted to such an extent that some
plantations are covered up to seven-eighths with coconut palms in
between which bananas, kape, taro, manioc, etc. flourish.

412 The tool the Tongans use for cultivation has changed as a result
241 of European influences, insofar as the old wooden digging stick (huo)
177 that was flattened at the end and was not much wider than two to four
inches (415)

/156 cont./

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415. J. Cook, Beschreibung...loc. cit. VI. p. 284.
was replaced chiefly by two tools that have iron blades: The huo
spade consists of an oval iron blade, approximately 14 centimeters
long, 12 centimeters wide and provided with a socket approximately 17
centimeters long which is stuck onto a strong wooden handle about
1.50 meters long. The natives buy the blade from a shopkeeper and
(432) make the handle themselves out of toa wood (Casuarina equisetifolia L.);
(824) in a way, this tool represents the old digging stick, but is more
efficient. (416)

416. Th. West already mentions it in 1865. (Th.
West, Ten years... p. 146); a smaller huo
spade with an iron handle is seen more seldom.

The huo lafa-lafa is a slightly angular thrusting iron (length
approximately 13 centimeters, width approximately 18 centimeters,
socket approximately 13 centimeters long) with its socket set on a
wooden handle (approximately 1.70 meters long); the natives buy the
tool ready-made from a shopkeeper and of course replace the handle
themselves if it breaks. The huo lafa-lafa is used chiefly for
slashing weeds on the plantations, sometimes also for digging in loose
ground. The large machete (417)

417. See p. 203.

is also extensively used on the plantations, to cut down tough weeds,
to harvest various crops, etc. /157/ /Illustrations appear here/
/158/ Sometimes a regular European pitchfork is used to loosen the
ground (for example, in planting the stalk-cuttings of the sweet
potatoe); one seldom sees European spades or shovels. The ancient
241 Tongan digging stick has survived, in a sense, on the smaller islands
412 where, on the plantations, the natives cut a piece of wood about two
178 meters long, whittle it at the end by one-sided blows with the machete
184 and then use it as a huo langa to break up (loosen) the soil in planting
kape (less often taro or yams).

[TEXT CONTINUED ON PAGE 236]

100: Koch--235

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(1951-1952)

1955

OU9 Tonga OU9

/157 cont./

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Digging stick with European
iron blade (huo spade)
(Expedition collection, No. 93)



Shoveling tool (huo lafa-lafa)
(Expedition collection, No. 284)

/158 cont./

000 kape (less often taro or yams). With these tools they usually work
241 standing. The former, apparently customary, squatting method of work
412 (418)
516

418. See, for example, J. Wilson, A missionary voyage.../cited in English/ p. 245.

407 is used only by a few very old men. Plows as well as other agri-
177 cultural machines and tractors are used by Tongans under the guidance
242 of whites only on the state experimental farms on Tongatapu and on the
property of Crown Prince Tungi on this island.

121 The following survey may give an insight into present-day agri-
241 culture and show the changes that have taken place.

'ufi - Yams (Dioscorea alata L.)

244 Even in ancient Tonga yams were one of the most important food
262 plants (if not the most important crop). (419)
178

419. See J. Cook, Beschreibung...loc. cit. VI.
pp. 163, 237, 283/284; W. Ellis, An authentic
narrative...I. p. 89.

[563] White employees in the Tongan government have so far discovered 80
[037] varieties of yams in the Archipelago; more than 20 different names are
familiar to the average Tongan. Yams are still the favorite tubers
on all the islands, though their total cultivation has decreased in
Tonga in comparison with the past (see above); in the Ha'apai group
yams are today planted to a lesser extent, whereas their cultivation on
the larger islands of the Archipelago (for example, Tongatapu) is
still quite extensive and in some places probably corresponds to that
of the past.

244 Planting time--with certain shifts as a result of the long north-
221 south extension of the Archipelago--extends from June to the first days
of August and from the third week of August up to October-November. As
244 a rule, a yam crop is planted only on land that has rested; suitable
242

/158 cont./

244
[242] ground is recognized by the type and size of the wild plants growing
[412] there. The weeds are cut down with the thrusting iron (huo lafa-lafa)
(see above) and the machete (hele pelu) (see above). After a week
or so the dried weeds are burned and the land is cleared--for example,
[462] swept. Women also take part in this work, whereas all the rest of the
[412] cultivation activity is the business of the men. The holes for plant-
[804] ing are dug with the Tongan "digging-stick spade" (huo spade) (see
above) to a depth of 0.5 of a meter to one meter and approximately one-
fourth of a meter in diameter; the distance from one plant hole to
the next (approximately 1.80 to 2 meters) is measured by the eye or
with a measuring tape (European tape or coconut cord [kafe])
and a stick or stalk, so that rows are formed and the entire layout
of the "yam garden" looks like a chess board. The /159/ plant holes
are filled loosely with earth so that the tubers can grow deep into
the ground. On the soft earth one piece of yam root is lain four
to six weeks in an earth-covered pit approximately one-half meter
deep, for sprouting.) Over the plant pieces the natives heap the
earth with their hands to form small hills. After a week or two the
young plant grows out of the hill. They cut twigs and lay them
under (between) the plants, so that the latter can "climb"; (420)

420. A special type of yam ('ufi lei) is also
allowed to climb up dead tree trunks, posts,
cords and wires.

today this saves the natives the work of having to turn over the
ground in the field every day to protect the plants from scorching
in the hot earth. The weeds which soon appear are removed--generally
[412] every week or two--with the huo lafa-lafa. The harvest takes place
after eight to twelve months (depending on the variety). After the
yams have shown that they are ripe by the leaves turning brown and
drying up, the tubers are taken out of the ground. First the natives

/159 cont./

244 dig with their hands until they feel the beginning of the tuber, then they continue digging with the huo spade and scoop the earth out with their hands. After they have felt the end of the yam root they fix it with the huo spade held against the opposite side of the dug hole and pull it out with their hands. They remove the earth from the tubers, fill up the holes and take the harvest home to their village.

[251] There they store the yams, which can weigh up to 50 pounds, but average from three to ten pounds, in the cook hut, under raised dwellings or in special storage huts. Yams can be stored for a long time, but usually the harvest is consumed in two to three months.

Kape = a plant related to taro (Alocasia macrorrhiza Schott)

Kape was planted even in ancient Tonga. (421)

421. See J. Cook, Beschreibung...loc. cit. VI. p. 237.

[262] Its importance for the native has probably remained the same, if it has not increased (especially among the Ha'apai group); on the island of Nomuka, for example, it, together with manioc, is the chief food. The thick, rhizome-like lower stalk is eaten, not the tubers. The Tongans distinguish four main varieties of kape. The plant, which grows considerably larger than taro, is planted in special "kape gardens" or (more often) individually (for example, in yam or sweet-potato fields).

[221] Planting time is from March to September, but especially during the last three months of this period. The natives plant kape on land cleared of weeds (in mixed planting together with yams or sweet

244 potatoes). With a huo spade they dig holes approximately .15 centimeters
412 deep and in these they plant seedlings which they fetch from a harvested kape field (where the tubers are left lying in the ground), or they place a tuber in the hole. They also plant the seedlings in earth

244 broken up by a simple digging stick (huo langa) (see above). In a yam-

/159 cont./

- 244 kape "garden" they plant the yams some 3.50 meters apart and set the kape between each of these. Weeding is done every week or two, especially during the first period of growth. The plant, which grows
- [412] from one year to the next, the natives harvest after one and a half to three years by cutting off the leaves with the machete (or the huo spade), removing the earth around the rhizome-like stalk with the huo spade and then lifting the stalk /160/ out of the ground with their hands. The roots and tubers are left in the ground. The stalks reach
- [251] an average length of approximately one and one-fourth meters and can be kept for two or three months.

kumala = Sweet Potato (Ipomoea batatas Poit.)

The sweet potato (with its yellowish tubers) has been cultivated for a very long time in Tonga. (422)

422. W. Ellis, for example, as early as 1777, regarded them as one of the Tongan crops (W. Ellis, An authentic narrative... I. p. 89.)

- [137] It is not clear, however, when and how the sweet potato, which was very probably indigenous to South America, came to Tonga, or to the South Seas in the first place. This cultivated plant still enjoys great popularity, but it is not planted to the same extent on all the islands (allegedly on account of different soil conditions) The Tongans distinguish between some ten varieties (on the basis of color and degree of firmness of the tubers).

- [221] Planting time is from March to September, but particularly in May and June. The natives plant the sweet potato by digging up small hills with the huo spade or the huo lafa-lafa on the land that has been cleared for planting. Into the hillocks they dig a hole with their hands and set in four or five stalk cuttings (tendrils with leaves). The sweet potato is usually planted in an open field, but sometimes, for lack of space, it is planted between coconut palms

824 /162 cont./

178
(372)
(752)
(524)

(old); serves to deep fire smoldering (old); as fuel (old): "Towel" (old), "toilet paper" (old) and to clean shoes (new): the fibers are also used to press out the grated coconut meat (old); the juice of green, warmed husks and the crumbly material between the fibers of old husks are used to treat wounds (old); used for making children's toys (sailboats) (new?).

(352)
(285)
(372)

5. The palm leaves (lou niu): used, as is, to sit on in the bush (old); used to make floor mats (takatapu) (old), fans (old), baskets (old), hats (for example, helemeti and tata faka-polis) (new); needed to make house walls and roofing (old); used in dry form as fuel (old).

(285)
(287)
(412)

6. The center rib of the leaflets (tu'a niu): used in plaiting baskets (old) and fans (old) and in making tapa stencils (see p. 328); used in making brooms (old).

(482) /163/
(372)

7. The leaf stems (tome): used as carrying sticks (see p. 250) (old); in dry state as fuel (old); also used to keep fire going (smoldering leaf stem wound with tapa) (old).

(287)
(415)

8. The bast fiber at the base of the leaf stem (kaka 'i niu): used to make tapa stencils (under side) (old) and as a bag for squeezing medicines and food (old).

(313)

9. The wood or the trunk (sino oe niu): used to make rafters and roof laths (old); used as posts and beams in houses (old?), as single posts on the plantations and for palisades (old).

(278)

10. The bark (kili oe niu): used to make medicines (for stomach pains) (old).

(227)
(278)

11. The roots (aka oe niu): used to plait fish baskets (traps, finaki) (old) and to make cuttle fish hooks (tailpiece) (old); the juice of roots serves as medicine for abdominal pains and headaches (old).

it maybe designated as the most useful plant of the /163/ Tonga Islands.

245 Cook reports that he came across coconut palms on Tongatapu "in astonishing numbers." (427)

427. J. Cook, Beschreibung...loc. cit. VI. p. 237.

/194 cont./

252 (especially bananas or breadfruit) are enriched in stewing or boiling,
is still done as in old times: They grate halved coconuts on the
coconut grater (hakalo), (496)

(412)
(415)

496. This is a tripod made of a piece of branch
up to more than two meters in length (or a
simple board approximately 0.80 - 1.00
meters long) to the front part of which they
nowadays fasten in place of a shell, a piece
of iron hammered flat and serrated with a file.

mix the grated meat with water, knead it with their hands, and, with
a sieve (made of hibiscus bast or the fibers of the coconut husk),
they remove the pressed-out coconut flakes from the now ready milky

252
177

liquid. The popular sweet dish (faikakai) (497)

497. For this they peel roasted breadfruit, mash it
(with a fresh breadfruit stuck on a stick), cut
the glutinous substance into pieces and mix it
with a sauce of coconut milk and sugar.

corresponds to the "Fy'caky' lolo tootoo" mentioned by Mariner for
ancient Tonga, (498)

498. J Martin, loc. cit. II. p. 285.

except that sugar imported by Europeans replaces the former juice
of Cordyline terminalis and cane sugar. Manioc today largely
replaces the mahoa'a (arrowroot /cited in English/ = Tacca
pinnatifida F.) which has been pretty much forgotten; similarly,
the pudding mentioned by Mariner (who calls it "Loloi" (499))

499. Ibid. p. 286.

252
178 is now made out of the starchy flour of manioc roots grated on a
perforated piece of tin. The burying of fruit and bananas, (500)

500. See J. Cook, Beschreibung...loc. cit. VI.
p. 288; J. Martin, loc. cit. I. p. 209,
II. p. 286.

popular in former times as a special way of preparing food and at the
same time as "stockpiling" in which foods started to ferment and

/196 cont./ Kava (510)

276
574

510. See p. 144 ff.

is drunk--as always--chiefly at social gatherings, on ceremonial occasions and before gala meals.

264
[178]

Most Tongans eat only two meals a day, as in the past. In the morning (between nine and eleven o'clock) they eat a rather large quantity of food, and in the afternoon (between 17 and 19 o'clock) they have a meal almost as large, at which they use any leftovers from the morning meal; the portions consumed by adults seem astonishingly large to Europeans. On Sundays they usually have an earth-oven meal after the second morning service, around 10 or 11 o'clock, /197/ the leftovers from which they often eat in the afternoon as their second meal. In the larger towns of Nuku'alofa, Neiafu and Pangai, however, many families have gone over to the European example of having three meals a day (between 8 - 9, 12 - 13, and 18 - 19 o'clock), the first of which is often a breakfast of white bread. Thus, out of 92 households investigated in the remote village of 'Uiha, 89 have two meals a day and only three have three meals, whereas in Pungamisi, the "suburb" of Neiafu, out of 37 households checked, 22 have two meals and 15 have three meals a day. The great distance of plantations from the villages is, in some instances, the reason why the natives also have "bush meals" (511)

[252]

511. Food roasted in embers or stewed in the earth-oven.

at irregular hours if they feel the need for them during their plantation work.

264
412

[516]

Though spoons, forks, and knives are nowadays present in most households, the Tongans as a rule still eat with their fingers, as in pre-European times. They sit cross-legged in front of the meals they have been served, tear off, press, or cut off (512)

512. With a machete or table knife instead of

/197 cont./

264
412

the bamboo knife customary in former times.

pieces of tuber, fish or meat and put them in their mouths; in the case of tubers, some also knead individual bites into balls. By far the majority of natives today use European pottery and tin plates instead of the banana and breadfruit leaves used as plates in ancient Tonga. It is only for gala meals that food is still generally served on banana leaves which are placed on plaited coconut-palm leaves or even on pieces of corrugated sheet metal. While kava is drunk only out of coconut mugs, cups and ordinary mugs are today present in all households for the rest of the beverages; the ancient Tonga banana-leaf mugs (513)

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513. See W. Ellis, An authentic narrative...I.
p. 96/97; J. Martin, loc. cit. II. p. 197.

264
178

have long since fallen into oblivion. Meals are eaten in the cook hut, in the open, on the verandas of European houses and sometimes (especially gala meals) in living rooms; eating inside the dwelling means a break with ancient custom, but it has by no means become a general habit.

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562

Women were never excluded from common meals in Tonga. (514)

514. Even Cook was struck by this (J. Cook, Beschreibung...loc. cit. VI. p. 289.

264
565

The once strictly observed social stratification among the people, however, made a sharp distinction, especially at meals, between members of the individual classes or the holders of various titles. (515)

515. See also J. Cook, ibid.

[178]

Though the differences /198/ are today less glaring in public, one will scarcely see a person of higher rank dining with one of lower rank.

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574
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The numerous ancient Tongan festivals belong to the past as a

/200 cont./

245
[177]

524. Copra is the cut-up and dried kernel meat (endosperm) loosened from the hard shell of the ripe coconut.

is a relatively new activity for the Tongans, which goes back only to contact with Europeans and is today carried out on all the inhabited islands of the Archipelago. The work itself, as well as particularly the money made from it, influence the life of these natives to a certain extent.

[492] 201/The work of copra production in the Tonga Archipelago proceeds as follows: On his plantation the native gathers the ripe nuts that have dropped from the coconut palms. He usually takes these to his place in the village in his own or a borrowed horse cart, (525)

525. See p. 256-258.

245
412

or he carries out the entire process of copra production directly on his plantation, especially if he has a little drying hut and the distance to the village seems too great. In sunny weather he splits the nuts (which are still encased in their fiber husks) with an axe into two halves and spreads out rather large quantities of these, with the meat side up, to dry in the sun. After two or three days, (526)

526. In bad weather, or at night, he turns the halves upside down and places them slatwise against each other so that they form chains and the rain can run off the rounded outer sides.

he takes the meat (in larger or smaller pieces) out of the hard shells with the copra knife.



Copra knife (hele hihi niu)
(Expedition Collection, No. 95)

/201 cont./

245 The copra knife (hele hibi niu) is about 35 centimeters long; the
 412 wooden handle and the steel (iron) blade are each one-half the total
 (432) length. The natives usually buy the knife in the shops of the chief
 (824) towns and then replace the handle with a self-made one (of feta'u wood=
 (325) Calophyllum inophyllum) that has a longer, slanting end so that the
hele hibi niu can lie more comfortably in the hand; sometimes they also
 make the entire knife themselves by heating an old blade or correspond-
 ing piece of metal in the fire, shaping it with hammer blows on a hard
 stone, then working it with a file and finally giving it a wooden
 handle which they attach with nails.

245 Afterwards, they dry the meat in special drying huts (fale faka-
momoa niu) for approximately 24 - 36 hours.

245 The drying huts "German New Guinea type" /cited in English/ were
 258 not introduced in Tonga until after the second World War. The natives
 themselves build them. On top of an iron cask lying on the ground
 and open at both ends (or on two /202/ casks joined to form a longer
 tube) they place a wooden grate (with an interspace of about one-half
 meter). The whole is encased in longitudinal walls and a roof of
 plaited coconut leaves. In the cask (or casks), which sometimes also
 has a side vent, a fire is built, fed with coconut husks and shells,
 which produces great heat and little smoke and dries the meat spread
 out on the grate.

245 Thereafter, the natives cut the coconut meat into still smaller
 258 pieces, spread these out once more in the sun for a day; finally, they
 432 fill bags with them and store them in the storage hut or the dwelling
 until there is an opportunity to drive or sail to the nearest receiving
 station of the Tonga Copra Board /cited in English/; if they near
 such a station they simply fill their traditional coconut-leaf baskets
 with copra and take them immediately to be sold.

/205 cont./

285

1. Floor Mats

takapau:

[352]

In every dwelling built in ancient Tongan style, the floor (sand) is covered with these mats. They are approximately 1.50 x 0.50 meters in size.

[824]

Women make the takapau from the young leaves of the coconut palm by tearing off on either side of the palm leaves part of the midrib with the pinnate leaflets hanging on it; then they interweave four of such "leaflet rows" into a mat (consisting of two joined halves).

The mats are dried in the sun and may be used for about four or five years.

2. Seat Mats

papa:

[594]

These are rolled up and stored in the dwelling and on special occasions (for example, visitors) they are spread out on the takapau (in a European-type house on the wooden floor); however, even on ordinary days the natives often sit on them. They are about 2.60 x 0.75 meters in size. Seat mats for one person (papa nofo'anga tokotaha) are today used now and then for meetings (fono), choir practice and in some churches.

[824]

The papa are made from the pandanus species, lou paongo. The natives cut its leaves, keep them in a shady spot until they are brown, then remove the thorny edges, cut the midrib, divide the leaves along these and roll the halved leaves into rather large bundles (up to about 100 halved leaves) which they store (hanging) in the house. Before plaiting they make them soft and pliable by stroking them with a shell or, for example, with the bowl of a broken European tablespoon; with a shell splinter or a piece of tin

[412]

/205 cont./

285
[412] they cut them into strips from which they then plait the papa.

3. Sleeping Mats

lo taha:

[513] The lo taha is the most ordinary sleeping mat and often serves as the bottom mat of a complete bed for girls, women and men. It is also /206/ placed over the papa as a seat mat. On journeys (by boat) it is usually the only sleeping pad. Its size fluctuates around 1.80 x 1.10 meters.

[824] The lo taha is generally made of the pandanus species lou tofua. From the cut leaves the natives remove the thorny edges and part of the midrib with a knife; then they roll the leaves into rather large bundles (of about 40 leaves each) until the leaves change color. Thereupon the leaves are dried in the sun (about four to six days). Then they divide them along the midrib into two halves and store these rolled up (as many as 100 halves per roll) or separately.

[412] Before plaiting them they draw a mussel shell or the bowl of a spoon over the leaf halves thus prepared, make them soft and pliable and cut them into narrow strips with a sharp shell splinter, a small piece of tin or a knife. The lo taha are often ornamented with

[386] interwoven uniform black strips which have been suitably dyed by

[824] being buried in the mud of a bog (for about three days) and boiled

[531] with manau leaves (and kokoa leaves, or also tavahi leaves). For a

[531] few decades these mats have also been ornamented along the edges with
[179] knotted, colored European wool threads.

fala tutu'ila:

The fala tutu'ila is also a sleeping mat and similar to the lo taha in kind and use.

It is made of leaf strips of the lou tutu'ila pandanus species which is not boiled, but simply dried in the air, like the lou paongo

/217 cont./

287 it off in one strip with their hands.

The pulled-off layer of bast (lou tutu), briefly rolled and stretched so that it lies flat, is exposed to the sun until it is dry. Thereupon it is again rolled up and stored thus.

When a woman has enough of this raw material and wishes to beat the bast cloth, she places the rolls of bast strips, the night before she plans to work, into a tub of water for about ten hours. Then, on a slightly curved, smooth (peeled) section of trunk (tutua) (usually of puopua-wood - Guetarda speciosa L.) approximately 15 to 20 centimeters in diameter and 2 to 3 meters long) /218/, which is cushioned by sticks placed underneath ('akau lango lango), she beats the moist bast strips with a four-sided wooden mallet (ike).

(412)
(824) (This mallet the men carve out of toa-wood [Casuarina equisetifolia L.] with a knife; it is about 30 centimeters long; the sides, three of which have grooves of different widths [to stretch the bast strip] and one of which is smooth [to smoothe out the beaten bast] are about seven centimeters wide.) The bast strips are of various sizes corresponding to the size of the trunk; you see some that are one meter long and plus-or-minus five centimeters wide (in the extreme) others, that are 4.5 meters long and 8 centimeters (at one end) to 3 centimeters (other end) wide. As a result of beating (fai tutu) (some 30 to 40 minutes), the strips become larger (for example, stretched to a width of 60 to 80 centimeters). (570)

570. The women also like to pound two pieces of bast, one on top of the other, in order to make better and stronger tapa.

These (rather thin) pieces of bast ("raw tapa," feta'aki) are dried and stored, so that from a greater number of them large lengths of tapa can be pieced together.

/218 cont./

287 Before that, however, the dye must be obtained to dye the tapa
386 lengths. This the women also take care of. From a wild koka-tree
412 (Bischofia javanica [flower]) growing on plantation land, and with a
824 scraper (me'a vau koka) made for his purpose and consisting of a metal
band in the shape of a loop fastened to a wooden handle or simply a



Koka-scraper (me'a vau koka)
(Expedition Collection, No. 175)

metal band bent into shape, they first scrape off the outer grayish-brown bark layer, and then scrape a quantity of shavings from the reddish bark layer, which they take to the village in coconut-leaf baskets. (The koka-trees survive this procedure, and the same trees are used again and again.) The bark shavings are soaked in water and then laid upon the open, outspread pressing tube (fau tau koka) plaited out of hibiscus bast) which is thereupon tied up and wound with hibiscus bast. This large, sausage-shaped object is tied together at the ends and hung from a strong tree branch. Through the ring that is formed by the pressing-tube they insert a heavy stick and turn it so that the brown koka-color runs into a vessel placed in readiness. In order to squeeze out the "last drop" two or four women (girls) sit on the two ends of the stick.

287 Whereas the beating of the bast lengths is performed by women
386 who work separately or in twos or threes (side by side), and even
461 the koka -pressing is done only by a few women (girls) working to-
476 gether, the making and dyeing (koka'anga) of the large strips is

/219 cont./

287 this a second layer of tapa (lauolunga) (consisting of feta'aki), (574)
386
[381] 574. The individual feta'aki are properly
trimmed as they are laid in place.

which is pressed on (glued) and rubbed with the color-scrap soaked
with koka dye, so that on the now brownish surface the darker brown
patterns of the printing panels stand out in contrast. With paint-
brushes (fo'i fa) (pandanus fruit) the women draw over the individual
patterns. When they have finished painting the length of the tapa (575)

[412] 575. They straighten the edge of it with a knife
or with scissors.

on the "drum," they pull it down far enough so that on its longitudinal
edge more feta'aki pieces can be glued, layered, dyed and painted,
whereupon the process is repeated again and again, so that on one side
of the drum a longer and longer length of two-ply, dyed and painted
tapa builds up. On both edges, which remain uncolored, the women
[802] always paint the number of the segment in arabic numerals; one segment
287 is always two hand-spans wide. A finished tapa length is about 20 to
27 meters long and 3.70 to 4.40 meters wide. For special purposes (for
example, as a gift to the sovereign) they make tapas that are more than
100 meters long.

The glued and dyed tapa lengths are spread out with the colored
side uppermost to dry in the sun. The women also lay them in the grass
in front of their dwellings before sunrise, so that the dew (and
thereafter the sun) can make the bast cloth "strong and beautiful."

287 The final operation is the redrawing of the decorations on the
531 printing panels. This the owner (576)
386

[422] 576. The owner of such a long tapa is always
[476] the woman who furnished the necessary raw
tapa (feta'aki); the kautaha works for
each of its members in turn (see pp. 137-140).

/233 cont./

501 small sail (made of European cloth, seldom a mat) for which they put
up a small mast. They use the popao to cover the distance between
501 islands lying close together, (615)
505

615. They seldom use the popao for greater distances,
as did a Nomukan, for instance, who, in 1951,
traveled 14 sea miles with it across the open sea.

for various methods of fishing (see above) and, on account of their
slight draft, to board and leave the small sailboats lying at anchor,
as well as to load and unload the latter.

396 The natives like to make the hull of the popao from the trunk of
824 the breadfruit tree (Artocarpus altilis), but they also use the mango
(Mangifera indica L.), the tavahi (Rhus taitensis Guillemin), the
toi (Alphitonia zizyphoides [Spreng.] A Gray), the mohe-mohe and, if
possible, the tamanu. Men who have particular experience in boat-
building, but also those who are doing this work for the first time
in their lives, cut the hull of the boat, which is about three to five
meters long, out of /234/ one piece of trunk. They also like to
(438) "export" roughly hewn hulls from islands were the aforementioned types
(435) of wood occur in greater abundance to islands that are poor in them;
on Nomuka, for instance, they pay 10 T. (breadfruit tree wood) to
15 T. (tamanu wood) for such an unfinished boat imported from 'Eua.

396 The owner of the boat-to-be may do the work himself, or a man
(465) experienced in boat-building who is provisioned or remunerated (who
may receive, for example, 2 T. or a horse) does the work. Often the
(476) men work in twos or threes, with relatives (for example, son, father,
son-in-law, father-in-law, cousin), friends or other villagers helping.
(462) Boat-building is purely men's work.

396 To hollow out the dugout, which has been roughly hewn with axes
412 and transverse hatchets, they use especially the small transverse
hatchet toki unga ko (with the gouge blade, see p. 200-202). They also

/234 cont./

396 use the quite effective toki hoka that consists of a handle about
 412 1.60 meters long and with a larger gouge screwed to one end, with
 which the wood can be forcefully chipped off. The outer surface of
 [177] the hull is hewn with the transverse hatchet fale-vatu (see p. 200-202)
 until it shows the proper curvature and seems almost smoothly planed;
 if possible, however, they work with a European iron plane.

[284] To attach the two outrigger poles (kiato) (616)

[824] 616. For example, from wood of the milo tree =
Thespesia populnea (L.) Solander.

they drill holes with a European drill at two opposite points of the
 boat's side, enlarge the holes with a red-hot iron, place the out-
 rigger poles (their ends notched with the small transverse hatchet)
 crosswise over the rims of the boat's side and lash them in this
 position with coconut fiber cords soaked in water, which are drawn
 through the bored and burned holes and are tightly and neatly wound
 and finally pounded firm with a small transverse hatchet (used as a
 hammer). Sometimes they also connect the two outrigger poles about
 0.80 to 1 meter from the hull with a rod ('akau puke) (617)

617. Of milo-wood, for instance.

lashed to them, in order to achieve greater strength of the outriggers.

396 The float (hama) (618)

[824] 618. For example, of mohokol wood = Cananga
odorata (Lam.) Hook. f. and Thomson.

which has already been prepared, with ends tapering to a point, is
 then provided with four (or five to six) drilled holes (European
 drill) in the two sections where the outrigger poles are to be
 fastened; into the holes, trimmed and pointed struts (tuki-tuki)
 (619)

[824] 619. For example, of ton wood = Casuarina
equisetifolia L.

/234 cont./

396 are pounded slantwise (with a chunk of wood or the back of a hatchet) so that they are joined over the two sections in such a way that the outrigger poles can be fastened to them with coconut cords.

• [412] The protruding ends of the struts and the outrigger poles are then cut off with a machete or are sawed off with a handsaw. (621)

[501] 620. The measurements of a popao completed at the end of December 1951 on Nomuka were:
hull: length 4.50 meters, height (center)
0.35 meters inner width 0.25 meters; outrigger
poles: 1.83 meters long; connecting rod of
the outrigger poles: 2.05 meters long; float:
3.22 meters long; struts: 0.38-0.47 meters long.

After a short trial run (with old paddles) the boat is anchored under water for a night, to make it firmer and tighter; then it is ready to be used.

Instead of struts they often merely pound small plugs into the float and fasten to them flexible pieces of wood obliquely to the float, on the /235/ upward-bent ends of which the outrigger poles are lashed. This method is used more in the northern than the southern part of the Archipelago.

[178] The present-day popao apparently still correspond to their ancient Tongan models in the use of materials and the construction.

In order to make them more seaworthy, however, the natives sometimes also nail laths and boards to the walls and elevate the bow and stern with corresponding wooden attachments; the resulting seams are sealed with scraps of cotton or with imported cement. A leak is stopped up with tapa or cotton and a piece of tin or copper nailed over it, or only cement is used. Twine and wire sometimes replace the solid coconut-cord lashings. Some owners of such outrigger boats also paint them with oil paint (for example, blue) in order to make them more resistant to sea water.

/235 cont./

412 Though the popao seems unchanged in principle from that of the
178 past, the tools used in building it are quite different from those
179 used in ancient Tonga. The axes with black stone blades, the drills
(237) with shark's teeth and fish-skin scrapers (621)

621. See J. Cook, Beschreibung...VI. p. 287.

have long since disappeared, and new equipment is used instead, which represents, in part, a combination of European material and Tongan form, (622)

622. See transverse hatchets, p. 200-202.

in part, purely imported materials of whites.

501 To propel a popao one or two paddles are required. Special
[415] bailers (box at the bottom of the boat) with a handle inside are very
(178) seldom made any more. The natives usually use rather large coconut shells or empty cans to bail out.

501 The supply of boats of the popao type is by no means uniform on
184 the individual islands. Investigations made by the author in 1951/52
422 for instance, showed that in 'Uiha (Ha'apai) only three out of 100 households had popao, whereas the 85 households of Nomuka (Ha'apai) had about 40, and the 45 households of Fugamisi (Vava'u) had 17 boats of this type. There are apparently no particular reasons for this unequal distribution, for the living conditions of the natives of 'Uiha and Nomuka are very similar. The people of the remote village of 'Uiha--in which, according to statements of older Tongans, only a few decades ago almost every household owned a popao--seem to have simply lost the inclination to build these boats, whereas the inhabitants of Fugamisi (the "suburb" of the urbanized harbor settlement of Neiafu) still show a greater interest in this boat, though there is no compelling necessity for it. One may assume, in general, that the supply of these simple outriggers--considerable though it

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100: Koch--509

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(1951-1952)

1955

OU9 Tonga OU9

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3. Tongan /male/ in everyday clothes

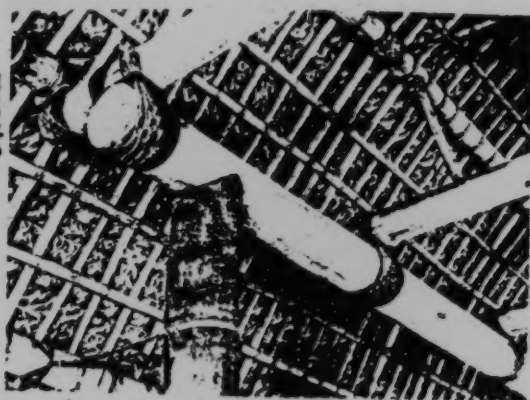
142
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4. Pounding the kava root

[End Plate 2]

284
342
335



11. Coconut cord lashings in a dwelling

291
335
412



12. Making rafters with the transverse hatchet fale-vatu

[End Plate 6]

226
291



13. Spearing fish

244
412
291



14. Harvesting yams

[End Plate 7]



17. Pounding bast strip to make tapa

[End Plate 9]

241
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484
494
[481] Frequently, walking for another hour follows the bus ride. Transport of crops from the 'api usually involves greater lengths of time as the common method consists of a horse-drawn cart (Plate 9, p. 93).^A

226
[461]
[262]
[438] Fishing is a second significant activity conducted away from the 'api, although of less concern within the interior of Tongatapu and along those shores with poor sources or access. In Vava'u and Ha'apai, fishing often consumes several hours per day, and supplies not only family food needs, but also enough for sale in local markets.

461 A third major activity concerns church and social functions within the local village or the nearest urban area. Many of these activities are concentrated during the weekends, such as marketing and major church functions. However, social activities during the week require participation of several hours per week.

In addition to the above, an entire range of miscellaneous labor must be considered, due to the low level of specialization of labor in Tonga. Thus, to summarize, it is evident that potential 461
241 expansion of agricultural production in Tonga involves not only issues of land tenure and management, but also individual incentive, tradition and the amount of time devoted to agricultural activities.

During interviews conducted on all of the major Tongan islands, lack of land was most frequently denoted to be the major limitation upon agricultural expansion, while laziness of Tongan 241
412 farmers was the second most frequent response. The third most frequent explanation concerned the lack of adequate agricultural tools and machinery. An examination of farm equipment, either owned or rented by the interviewees, indicated that most farmers possess A[Due to poor quality of original, plate has not
A been marked for a Category--Analyst.]

241 only basic agricultural tools, such as a bush knife, hoe, planting
[412] stick, and spade (Plate 10).^A Beyond these, little else is used
[407] for cultivation. Of all landholding Tongans surveyed, only 16
[426] percent used a plow or tractor and, in each case, the implement
[427] was either rented or borrowed.

407 The maintenance of agricultural machinery, in terms of effi-
ciency and materials (i.e., fuel, parts, and lubricants), severely
407 limits the possibility of increased use within Tonga. Interviews
493 within the Tongan Department of Agriculture indicated that this
problem reaches every level of agricultural operation, from trucks
493 to garden tilling machinery. For example, a large truck was cited
as having not been used for over 18 months, because of a broken
transmission gear. The required part, ordered from Japan, had not
398 yet arrived and no one knew if it ever would. In the interim, no
attempt to make the part, in one of the local blacksmith shops, had
493 been made. It was confidentially learned that, should the part
arrive, the truck would remain largely inoperative because of another
damaged gear which was not totally broken and, therefore, not
398 replaced. Other examples of this situation were noted, emphasizing
the serious lack of basic mechanical service.

241 When workable machinery is available for rent, the cost is
427 often prohibitive to the average farmer. Informants also complained
[557] that rental machinery is allocated on the basis of social standing
and status, rather than need. Thus, the majority of planting, cul-
241 tivation, and harvesting on Tonga remains the work of hands, and is

expected to remain so.

A [Due to poor quality of original reproduction,
A plate has not been marked for a Category—
Analyst.]

102 Mr. BRIERLY's Sketch of the Friendly Islands, with

place to see something of the usual occupations of the natives at their homes. One of the things, that strikes a visitor most upon his arrival at Tongatabu, is the incessant hammering which commences at daybreak, and continues without intermission until about noon. To satisfy ourselves as to the cause of this, we entered the first house in which we heard the noise, and found two women engaged in making tappa, or native cloth. They were seated on the ground, one on each side of a log about 6 feet long and 6 inches square, which was raised just clear of the floor by means of short bits of stick placed under the ends of it. Each woman had a piece of the bark, of which the tappa is made, laid before her on the log, and was beating it with a wooden mallet about a foot in length, the handle being rounded, and the striking end square, with grooves in the sides. They wetted the bark from time to time, sprinkling water upon it from a large wooden bowl that stood upon the ground beside them. [23] [287] [512] [412] [415]

In another hut a woman was shaving the head of a young child with a bit of glass broken from the neck of a bottle, dipping her finger into a cocoanut-shell of water and wetting the place as she went on; the little brown head became perfectly smooth and shining under the operation, which was so skilfully performed as not to disturb the child as it lay fast asleep on her arm. They call this operation fa-fai-ulu; literally, shave the head: shaving the chin being called te-lee kava, razor the beard. [302] [412] [415]

In the next hut two men were busily employed in rigging the model of a canoe, to sell or barter on board the ship; they were very intent upon their work, leading all the ropes correctly, and finishing every part with great care. [523] [439]

In one house we found a native artist, a woman who made designs for patterns on tappa. She was at work, and had several lying by her which she had just finished. In a corner of the hut lay a pile of enormous yams, some of them being upwards of 4 feet in length. This store, together with other provisions, had been collected by the husband against the confinement of his wife, which appeared likely to take place very soon. The man sat watching her, and nursing a fine boy, and seemed quite proud of the attention with which we regarded his wife's performance. [531] [251] [843] [855] [123] [601]

In the course of our exploring excursion we called upon the principal man of the place, who had presided at the school examination in the morning. He was sitting alone in one corner of the matted floor of his house, and welcomed us as we entered, desiring us to be seated beside him. The house was in no way superior to the generality in the place, except in being a little larger and having the court-yard round it more carefully kept; the only piece of furniture in it was a large kava bowl, which hung up in the apartment. In a corner of the court-yard lay, [723] [631] [601] [352] [531] [202]

106 Mr. BRIERLY's *Sketch of the Friendly Islands, with*

123 without rising, and shook hands—first with Captain Keppel, and
643 then with the rest of the party. He thanked Captain Keppel for
574 having brought him a letter from the governor of New Zealand,
but said that, having been engaged in receiving his chiefs that
morning, he had not yet had time to read it, and then, having
accepted an invitation to dine on board that day, he turned his
face away, and, resuming his former abstracted look, did not
speak again.

574 The ceremonies connected with the kava drinking were now
644 going on. Two chiefs, each carrying bundles of the root, came in
[276] and laid them upon the mat before the king, where they left them
and retired. The chief, sitting on the king's right hand, then
ordered them to be counted, upon which two men came and sat
down before them, with their faces towards the king. The cere-
mony then proceeded in the order which we were informed was
usually observed on these occasions, as follows:—The chief de-
mands how many bundles there are, and the men count them, call-
ing out A-tá-ha! Ua! Túlu! one, two, three, and so on, touch-
ing each bundle as they do so, and counting them over in this way
twice, the same form being observed although there might be only
two or three bundles. Pigs, yams, and other provisions are also
laid before the king and counted in the same manner, the pigs
being carved in the royal presence, each being divided into eight
parts, which are handed to the chiefs, who bring what they receive,
and again lay it before the king, retiring until his spokesman
recalls them, when they finally take it away. The pig's liver is
[237] laid upon leaves and presented to the king, who generally sends it
to some one as a mark of his favour.

574 Besides the chief on his right, who directs the ceremonies
644 generally, the king was attended by his orator, a venerable looking
537 old chief, who sat two removed from him on his left, and who, after
the chiefs had all presented their offerings, made a speech of thanks
for the king in return. He spoke rapidly, but distinctly, pausing
[201] for a few seconds between each sentence. During his oration, the
most perfect silence was observed, every one listening with an
appearance of great respect and attention; the chiefs, when he had
finished, calling out, Mālo-māléeah—very good, very sweet; the
king, all the time, sitting quite silent, and without appearing to
notice anything that was going on.

276 The kava root was now broken up into small portions with a
574 heavy pointed club, about five feet in length, made out of a whale's
644 jaw, the rind and points of the root being carefully removed, and
[412] pieces of it handed round to the chiefs, who chewed it into a pulp,
[237] which they spat into a piece of plantain leaf, and went with it to a
[415] man sitting with a large wooden bowl before him, in the centre of
the semicircle, facing the king. When a sufficient quantity had